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The Oil Man's Calendar

JULY 27–28	West Virginia Oil and Natural Gas Association, Charleston, West Virginia.
SEPT. 14–16	National Petroleum Association, Hotel Traymore, Atlantic City.
27 OCT. 2	American Association of Petroleum Geologists, Mid-Year Meeting, El Paso, Texas
OCT. 6–7	American Institute of Mining & Metallurgical Engineers, Fall Meeting, Petroleum Division, San Antonio, Texas.
10–14	American Gas Association, Atlantic City, New Jersey.
12–13	Indiana Independent Petroleum Association, Hotel Severin, Indianapolis, Indiana.
18	National Stripper Well Association and Oklahoma Stripper Well Association, Annual Meetings, Tulsa, Oklahoma.
19–21	Independent Petroleum Association of America, Tulsa, Oklahoma.
20–21	American Institute of Mining & Metallurgical Engineers, Petroleum Division and Industrial Minerals Division, Los Angeles, California.
27–29	Annual Convention, Texas Division, Mid-Continent Oil & Gas Assn., San Antonio, Texas.
NOV. 14–18	American Petroleum Institute, (Annual), Stevens Hotel, Chicago.
DEC.	Mid-Continent Oil & Gas Assn., Standing Tax Committees, Dallas, Texas.

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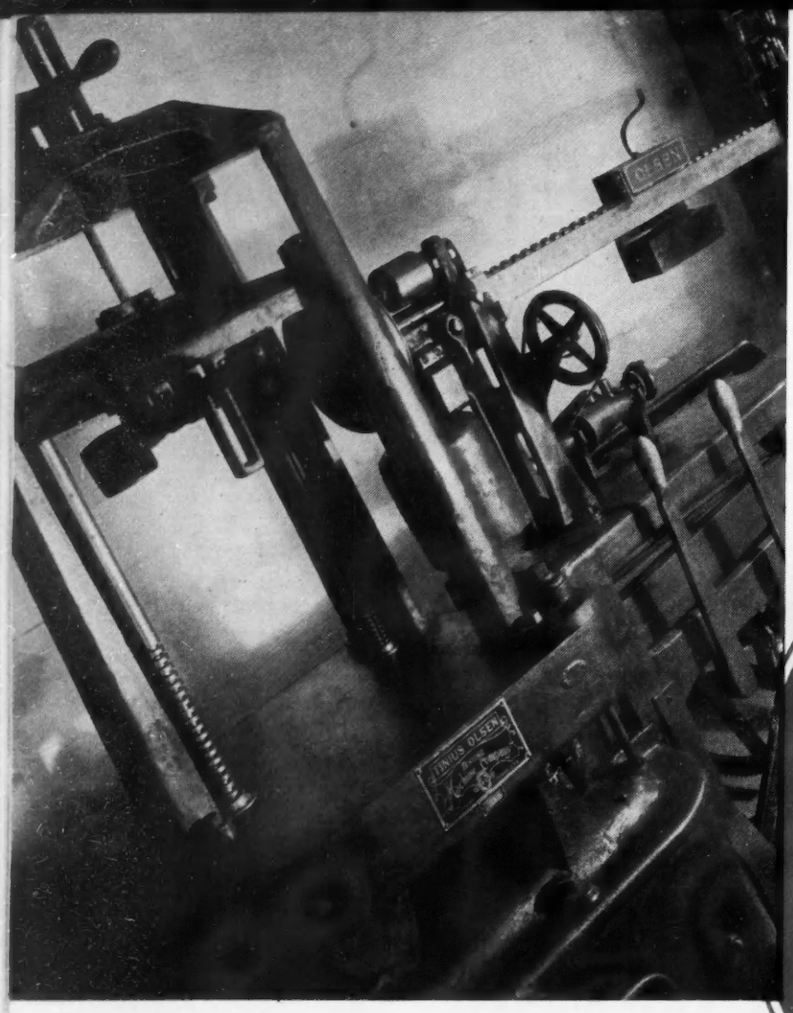

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This Week's Panorama

WHILE the oil industry's situation has remained generally favorable, there are local "sore" spots that need healing. Moreover, unless production is held in fairly strict bondage during August, the national picture also may take a change for the worse.

Washington Fears Cut

Washington observers interested in oil are fearful of a price break as result of the institution by the Department of Justice of its third case at Madison, Wisconsin.

While production of crude has been curbed in an effort to work off excessive above-ground stocks, there has been no equal corresponding contraction of refining, despite the fact that consumer demand is not sufficient to absorb the resulting output. As a consequence, the possibility is seen of a top-heavy gasoline situation which may eventually result in the throwing of a large volume of distress gas on the market.

Since the major companies, which have been the target at Madison, were indicted originally as a result of their program to absorb similar distress stocks in 1934-35, they are not likely to come to the aid of the small refiners again.

K-M-A in Trouble

While not immediately acute, the K-M-A field is getting waist deep in troubles.

Operators in the K-M-A area, which ranks as the most active drilling center by a wide margin, are negotiating for new outlets for their high gravity oil to forestall the dumping of crude upon the local market at distress prices. Indirect price cutting has been resorted to by operators, and more sacrifices will be made to force the disposal of the earned allowable of shut-in wells unless relief is provided promptly. The five purchasers in the K-M-A deep area currently are exceeding their respective crude nominations, and only one buyer has expressed a willingness to enlarge daily runs. In the meantime completed wells without pipe line connections will increase to more than 100 before the close of July unless the market is expanded.

Crude price sacrifices have made their appearance through operators having contracted to absorb the 10-cent a barrel common carrier pipe line tariff in making deliveries to a substantial independent refinery in the district. This concern is slated to handle between 15,000 and 18,000 barrels of crude during July under the above arrangement, with the oil originating from wells without market outlet. Producers are bearing the 10 cents per barrel pipe line charge.

Creation of a co-operative crude gathering and marketing unit to serve the K-M-A deep area has been proposed by independents to operate in conjunction with a common carrier pipe line concern in making tanker-lot sales on the Texas coast. The deep production averages above 40 gravity, and commands a top posting of $1.20 per barrel. A limited volume of oil can be moved daily through a common carrier line to the Texas coast for 20 cents per barrel, exclusive of the field gathering expense.

One K-M-A purchaser agreed recently to provide connections for 12 additional wells, having previously served 13 wells. Pressure is being exerted upon other buyers that have not borne a proportionate share of the oil load to take on additional wells.

Goldsmith Curtailed

It seems that too much West Texas crude has been backing up at its point of delivery, the Texas coast. As a result the situation in the Goldsmith field is not bright.

Following the curtailment of Goldsmith crude purchases by one concern, the other major buyers have refused to absorb the additional volume thrown overboard.

There has been some advocation for cutting runs from all West Texas areas proportionately, thereby flattening out the cut received by Goldsmith.

East Texas Pinched

We were going to write that the perennial market trouble maker of the past eight years, the East Texas field, appeared to be in good condition, when we learned it was not riding along so nicely with the six-day week producing plan. A tanker load recently was picked at $1.50 a barrel f.o.b. ship. That is about 5 cents under the regulation price, although some companies do not charge the full 2½ cents for loading boats.

However, the situation in East Texas is not regarded as alarming, although the market price would be paralyzed, it is generally believed, should the field be placed on a 7-day week production schedule again.

Sunday Shutdowns to Continue?

Meanwhile, the debate on continuation of Sunday production holidays for Texas wells flared anew at the statewide hearing in Austin.

To an argument that Sunday closing of wells had

discriminated against the huge East Texas field, operators from other Texas districts pointed out continuation of the shutdown was necessary to bring supply into line with demand.

The answer will come shortly, when the Railroad Commission issues its proration order for August.

Consequently, the outlook of the industry for August remains obscure until allowables scheduled are arranged, particularly Texas'. If production is increased difficulty is to be experienced, but if strict curtailment is continued things will have that "velvet cast" known as rosy.

Gulf Coast Outstanding Area

Although it long has been recognized as one of the most important producing regions in the world, both from the standpoint of its present position and future possibilities, the Texas-Louisiana Gulf Coast's impressive record for the past 2½ years has advanced it more rapidly than anticipated.

The territory is experiencing a peak in drilling and exploratory activity, and a remarkably large number of discoveries. These are enabling the territory to produce its greatest volume in history, and still expand steadily its volume of known unproduced crude reserves to an ever rising record level.

Present estimates indicate an ultimate yield of 4½ billion barrels from known fields in the Gulf Coast, which is an increase of 1,200,709,000 barrels in 2½ years. Since the cumulated Gulf Coast production is 1½ billion barrels, the discovered unproduced crude reserves of the area are 3 billion barrels, which is an increase of 900,000,000 barrels in 2½ years.

The number of Gulf Coast fields is increasing rapidly. In the past 18 years there has been a seven-fold gain to a total of 166. Moreover 57 of these fields have been opened during the past 2½ years. In addition more than 100 new prospects have been found during this period that have not been proven productive as yet.

This issue of THE OIL WEEKLY is dedicated to this outstanding territory. It is the fourth "Gulf Coast Number" published by this magazine. Emphasis placed upon the Texas-Louisiana Gulf Coast by publication of previous "Gulf Coast Numbers" has been amply justified by succeeding events, and we confidently look forward to additional developments of importance in the future.

Oil development in South Louisiana is not retarded by the excessive number of bayous, swamps and lakes—as illustrated by this excellent area photograph of Fohs Oil Company's State Bay Baptiste 1 in Terrebonne Parish. It is the deepest well ever drilled in the Louisiana Gulf Coast and is the second deepest test in the world. A depth of 13,409 feet was attained. Note how it was located in the water, and the vast amount of water that covers the surrounding terrain. The tracks noticeable in the lower portion of the view were made by marsh buggies, the modern method of traveling in swampy regions. They go equally well whether it be in water, marshes or on dry land.

Core Analysis Application To Well Completion

Presented before the Indiana-Illinois Petroleum Conference, June 4, 1938

By JOHN H. CAMPBELL and JAMES A. LEWIS

THE laboratory analysis of oil field cores and the subsequent interpretation and application of the results to oil field production problems is not new. The advent of systematic water flooding in Pennsylvania gave impetus to core analysis as a method of evaluating potential water flood properties, and later to a method of understanding the many problems of fluid movement attendent to this secondary recovery process.

The first core analysis contained only the porosity of the formation. Later another series of tests was added to give the fluid content of the sand pores. Soon the fluid content determinations reached a point where their accuracy was more generally accepted, and the operators were convinced that the oil content found by the analysis was a reasonably close estimate of the actual content of the formation in place. Fortunately for the first analysts, they were working in a field where the reservoir pressure had decreased to a point where it did not cause a serious depletion of the oil content to reduce the fluids contained in the pores to atmospheric pressure. Likewise, the method of coring these sands of low permeability did not cause displacement of oil by the drilling fluid. The pressure gradient from the hole to the formation was not sufficiently great to cause any appreciable penetration. Within a few years after oil content tests were added to the testing technique, a new addition was made, that of permeability. With permeability came the greatest asset yet found for the proper interpretation of question involving flow through porous materials. These basic laboratory determinations, namely: porosity, oil content, and permeability,[1] were combined into a complete analysis as of that date. Core results were studied in the light of production history for the areas represented by the cores. Rate of water input, oil production and water production records were analyzed and correlated with the core analysis. Physical factors of spacing, viscosity of oil and bottom-hole input pressures were recorded and each evaluated in keeping with theoretical equations.

With this background of experience, analysts were in position to answer the operator's questions when coring in new areas, for: (a) proper spacing, (b) shot points, (c) packer setting, (d) rate of water input, (e) optimum pressure, (f) feet of floodable sand, (g) rate of oil recovery, and (h) ultimate recovery. It is apparent from these applications to every day field problems, that core analysis interpretations, made possible by direct laboratory-field correlations, played an important part in field operations.

Flush Wells

The successful application of core analysis to the completion of flush wells is of recent development. The conditions under which the cores are obtained are ideal for altering their original fluid content, which makes interpretation of the results more difficult. Water from the drilling mud enters the core, increases the normal equilibrium water saturation,[2] and at the same time displaces oil and gas. Then as the core is brought to the surface the previous fluid contents are disturbed by a reduction in pressure. The analyst receives the core in this altered condition and it is his responsibility to analyze the core and make definite recommendations as to the quality and quantity of fluids that will be produced from the various sections penetrated. In effect his responsibility is to calculate back to the quantities of gas, oil, and water that were present in the formation before being cored. This having been done, the data are at hand to predict whether gas, oil, or water will flow from the formation into the well when completion is attempted. Also the original fluid content of the formation has been computed during this process and thus the total oil and gas in place is known. Likewise, since the permeability of the formation is measured along with the other tests, the analyst is in a position to know the relative, and in some cases the actual, rate of flow into the well under predetermined production conditions.

The oil content of the core is one of the routine tests made on cores from flush wells. These tests are made with the thought in mind that it is not the total oil content of the formation in place but is a residual content that will be present in the reservoir after the reservoir has been subjected to similar methods of depletion as was the core. In the majority of cases the oil found in the core will be the residual oil content of the reservoir after complete water drive and gas expansion. It is the amount of oil that should be deducted, in the same manner as is connate water, in the calculation of recoverable oil, when using the sand thickness-porosity method.

Field Analysis

After initiating systematic core work on flush wells it became apparent in a short time that the analyses must be performed on location, that the time lapse between a recovered core and complete analysis should be reduced to a minimum before the results could be of maximum value to the operator.

New analysis methods were developed; and complete laboratory equipment was incorporated in bodies specially designed and built for the requirements. These were mounted on trucks equipped with suitable installation of power supply equipment. The first unit went into operation in October, 1936, and the conditions attending the operation of the units and the ap-

plication of the results have proved workable and successful.

In practice, trained personnel meet, sample, analyze and interpret core results while the well is being cored and the results are available before the arrangements for completion have been started.

Application to Well Completion

As was mentioned previously, a core recovered from a reservoir that contains gas, oil and water under pressure represents, with a reasonable degree of similarity, the conditions that will be present after all present known economic methods of oil production are complete.

The analyst obtains data from the core that represents these final conditions and it is necessary for him to take these results and calculate back to the volume of fluids that were present in the formation before being cored. We are fortunate in that in most cases the physical properties of the formation are not altered by good coring technique and the interpretation is applied only to the changes in fluid content. The application of sand characteristics combined with reservoir fluid volumes has proved to be a great aid in selectively completing wells for maximum return on the invested capital.

The detailed foot-by-foot analysis reveals the actual productive characteristics at each point; whether the sand will produce gas, oil or water; the approximate gravity and gas/oil ratio of productive sands and a qualitative comparison between the different productive zones penetrated by the well.

In certain areas where oils are deficient in gas, thus causing smaller variations in the physical properties of the oil, it is possible to estimate the initial production of wells. This gives an index to the proper size pumping equipment that should be used in order not to under-equip or over-equip a well.

The permeability distribution within the sand body is the controlling factor in the placing of shots in a well to increase production. Sands having permeability values above a given value are not benefited by shooting whereas tighter sections always should be shot to increase their flow. In the early stages of production this attempt at equalization in flow rates from sands of different permeabilities will be found to possess other desirable features when the injection of gas or water into the formation is considered.

Cores analyzed on location enable the analyst to extend his calculations to estimate reservoir volumes much further than if the cores were perfectly sealed and later shipped to a permanent laboratory. Uncertainties of sampling and preservation enter in unknown amount when samples are shipped and are difficult of correct computation.

Relation of Permeability Profile to Productive Stratigraphy

In many oil fields it has been noted that there is a marked continuity of permeable zones that carry throughout the length and breadth of the productive acreage.

Information of this type can be used to a decided advantage in determining areas for the most favorable locations of prolific production within known productive areas. It is also of use in determining sand thickness above an established water-oil contact. In limestone production, data in this form is useful in determining areas of porosity. In secondary recovery work it is useful in correlating peak permeability zones from well to well, thus indicating comparable rates of fluid movement and depletion time rates in the various zones. In exploration work, the value of well completion in a correlated possible productive horizon may be strengthened by comparative permeability characteristics in the zone to known characteristics in productive areas.

When edgewater appears in a well it will be appearing through the sand of higher permeability. Knowing where these streaks are located facilitates plugging of this section and exposing strata of lower permeability in order to prolong the period of water free production.

Flush Core Analysis Used Later in Secondary Recovery

As pointed out previously, core analysis plays an important role in appraising, developing and applying secondary recovery methods to fields that have become deficient in reservoir energy. During the early stages of development it frequently is possible to determine the sources of energy within the formation that gives flowing or high initial pumping wells. Where the oil is deficient in gas or is not under an effective water drive, past experience has shown that large volumes of recoverable oil will be left in the formation, lying dormant until application of pressure causes displacement.

During the early stages of development of fields of this type, core results can be used to properly complete the flush wells and likewise to choose a spacing program that later will fit into secondary recovery operation. The permeability of the sand will not change with time and at a future date the information can be used in determining the proper method of applying secondary process for maximum economic return.

Advance core analysis data places the operator in full control of the situation, eliminates redrilling of properties to obtain cores and allows him to calculate before development the volumes of fluid to be handled, the optimum pressure required and the rate at which the recoverable oil will be obtained.

Core analyses obtained through the medium of portable field laboratories can be applied to well completion by giving the operator:

1. Production characteristics of each foot of recovered formation.
2. Approximate gas/oil ratio on exposing certain sections to production.
3. Qualitative productive capacity of the various bearing zones that are cored.
4. Actual productive capacity of sands that contain oils that are deficient in gas.
5. Gas/oil and water/oil contacts.
6. Spacing program that will be adaptable to later secondary operations.
7. Estimates of the total oil reserves and the net recoverable oil.

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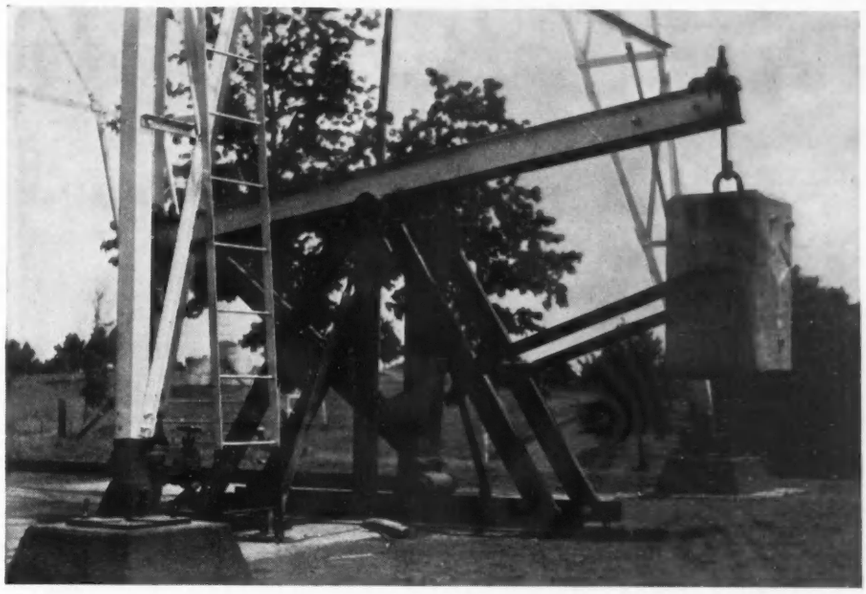

Pivoted arms, easily lubricated, guide the concrete counterweight and entirely suppress destructive pendulum action sometimes found in counterweight systems.

Elimination of Counterweight Vibration Lengthens Rod Life

By M. T. PATE

THE average well in the East Texas field, with a rod string not to exceed 3600 feet and a hole which varies only slightly from vertical, is not expected to present any serious rod troubles, but there are exceptions. There have been instances where sucker rod breakage has been high, and where only a few of the fractures could be laid to paraffin accumulations within the tubing.

In one such instance dynamometer tests on the rod line showed that on approximately one-third of the pumping stroke there was a sudden stress applied, which could not be explained by any variation in the pumping load. Further investigations disclosed that the overload came only at certain pumping speeds, and then only after the well had been pumped steadily at that speed for from 15 to 30 minutes.

Dismantling of the jacks, of conventional type, showed no bearing or pin flats that might take the blame, and as a last resort the counterbalances were checked. Of concrete, with a central pipe cast into the block, the latter to ride on a pivoted slide mounted at the rear of the jack base. This investigation found excessive wear on the slide and within the sleeve block at a point corresponding closely with the jump in the rod-line load.

Further observation of the counterbalance action, with the dynamometer replacing the suspension link ordinarily tying counterweight to jack beam, placed a finger on the trouble. At certain speeds lying within the normal pumping operation of the wells, the pendulum action of the suspended counterweight built up to such an extent as to cause cramping or binding of the slide within the block on the guide pipe, momentarily arresting the descent of the weight.

This stoppage of the counterbalance naturally threw the entire rod string weight against the rod-line in addition to the normal pumping load, resulting in stresses far exceeding those for which the installation had been planned.

Revision of the counterbalance system followed, with the link initially used being replaced by a pin and double bearing, carrying between them a link which hooked into a U-bolt cast within the new concrete counterweights. Then, by means of a pair of side rods, pivoted through the center of the block and carried in a long sleeve bearing across the back leg of the jack frame, the swing of the counterweight block was controlled, and the pendulum action which had formerly caused the trouble entirely suppressed.

Elimination of the former long sliding bearings and their replacement by smaller, rotating elements simplified the lubrication problem, and also made for much quieter, smoother operating jacks.

Oil Well Performance

A DISCUSSION AND PROPOSED TERMINOLOGY

By B. P. KANTZER and E. G. TROSTEL,
Union Oil Company of California

A COMPILATION of terms used in oil-well performance measurements and calculations has been developed, and discussions which explain and qualify these terms are included. An attempt has been made to select terms in common use, deviating from them only when so required in order to avoid confusion. No attempt has been made to include terms used in reservoir flow, tubing or annulus flow, or in mechanical lifting methods. A table of the proposed terms, symbols, and definitions is appended.

Presented before the American Petroleum Institute, Chicago, November 12, 1937.

INASMUCH as an apparent need has been felt for definitions and limitations concerning well-performance measurements and interpretations, it is herein proposed to discuss in some detail those terms most commonly encountered in current production practice. By well performance is meant those sub-surface characteristics of a well which are divorced from any consideration of the method by which the oil is brought to the surface.

Henry Darcy, in 1856, published the first extensive study of water flow through sands. Since that time many studies of water-well performance have been published, among them a detailed treatment of terminology by O. E. Meinzer.[1] Extensive oil-well performance measurements date back to the advent of the sub-surface pressure gage. In 1930 T. V. Moore[2] discussed the use of sub-surface pressures in relation to well performance. Since that time many investigators have published papers concerning well performance, but to date no consistent nomenclature has been established.

In order to define terms which are rather loosely used in production technology, an effort has been made to combine the salient features of published and oral opinions with fundamental concepts. Future requirements in terminology will no doubt necessitate additional nomenclature. In an attempt to anticipate such future needs, a discussion of some terms not commonly used is included. Due to the variety and complexity of the many factors involved in well performance, complete analysis is impossible, and simplifications are required. Most of the terms to be discussed herein are variable with time. However, this discussion will not be concerned with such time functions.

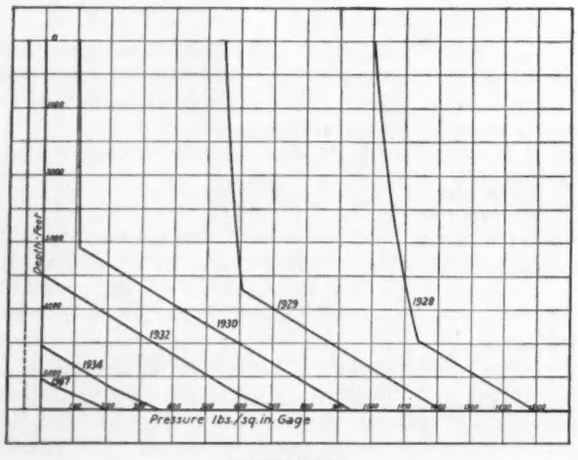

FIGURE 1
Typical Static-Pressure Traverses during life of well

It is hoped that the proposed terminology will foster a more general "meeting of the minds"; and to make the terminology as universal as possible, criticism and discussion of this paper are particularly invited.

Well-Performance Measurements

For the purposes of clarifying terms as they occur, a brief review of common sub-surface pressure-measurement procedures will be given. In general it might not be amiss to point out the necessity for accuracy and dependability of all measurements.[3]

Static Measurements:

Perhaps the most common of sub-surface pressure measurements are those in wells which have been shut in. A recording pressure gage is lowered into the well, and pressures are measured at various depths in the well.[4, 5] Figure 1 illustrates various types of curves which can be drawn to show the depth-pressure relationships in the well. Obviously, a static pressure, as such, has no meaning unless referred to a specified depth or datum. The term "bottom-hole pressure" has been loosely applied at times to designate pressures existing at indefinite depths other than the bottom of the hole. For this reason it is strongly recommended that the use of the term be discontinued unless the datum is the bottom of the hole.

When a well is shut in, the reservoir pressure in the immediate vicinity of the well bore rises to approach the existing reservoir pressure. Depending upon the flow characteristics of the producing zone, the well pressure will approach equilibrium condi-

tions at various rates. To study this phenomenon, measurements are made of pressures existing at a given datum at various stages of the pressure increase. Figure 2 illustrates the behavior of various wells during this build-up period.

Sub-surface shut-in pressures at other than equilibrium conditions should be qualified for depth and length of shut-in time. *It is, therefore, proposed to define shut-in non-equilibrium pressure as*:

$P_{d,t}$ = non-equilibrium shut-in pressure (1)

where:

P = pressure, lb. per sq. in., gage.
d = datum in feet of depth below the derrick floor.*
t = shut-in time, hours.*

*Datum in feet of depth sub-sea, and shut-in time in days, may be substituted if properly noted.

In view of the above considerations, a static pressure should be qualified for depth, and should represent

WELL-PERFORMANCE TERMINOLOGY TABLE

Reference No.	Symbol	Quantity	Definition or Units
Sub-surface Measurements:			
1	$P_{d,t}$	Shut-in pressure	The non-equilibrium pressure in lb. per sq. in.
2	P_d	Static pressure	The equilibrium shut-in pressure existing at a depth *d*.
3	T_d	Subsurface temperature	The temperatrue, in deg. F., existing at a depth *d*.
4	$p_{d,R}$	Producing sub-surface pressure	The pressure at depth *d* when production rate is *R* gross bbl. per day.
Surface Production Measurements:			
5	P_t	Tubing pressure	Lb. per sq. in., gage.
6	P_c	Casing pressure	Lb. per sq. in., gage.
7	R_g	Gross production rate	Gross bbl. per day.
8	R_n	Net production rate	Net bbl. per day.
9	Q_g	Gross gas-production rate	M.C.F.* per day.
10	Q_c	Circulated gas-production rate	M.C.F. per day.
11	Q_f	Formation (net) gas-production rate	M.C.F. per day.
12	Q_f/R_n	Formation gas/oil ratio	
13	Q_f/R_g	Formation gas-liquid ratio	
14	Q_c/R_n	Circulated gas/oil ratio	
15	Q_c/R_g	Circulated gas-liquid ratio	
16	Q_g/R_n	Gross gas/oil ratio	
17	Q_g/R_g	Gross gas-liquid ratio	
18	Q_{tbg}/R_g	Tubing gas-liquid ratio	
19	Q_{tbg}/R_n	Tubing gas/oil ratio	
Derived Well-Performance Terms:			
20		Mean pressure	Pressure by measuring area bounded by a depth-pressure curve, the depth axis, and the two lines corresponding to the top and bottom of the formation open to the well, and dividing by the length of the perforated interval.
21	$\overline{P}$	Mean static pressure	Lb. per sq. in., gage.
22	$\overline{p}$	Mean producing pressure	Lb. per sq. in., gage.
23		Build-up curve	The plot of datum or mean shut-in pressure vs. time.
24		Draw-down curve	The plot of datum or mean pressure against production time following a shut-in or idle period is defined as a draw-down curve.
25		Pressure-rate curve	The plot of datum or mean production pressure vs. production rate.
26		Gross liquid pressure-rate curve	The plot of datum or mean pressure vs. production rate in gross bbl. per day.
27		Mass pressure-rate curve	The plot of mean pressure vs mass rate of production in lb. per day.
28	M	Mass of gas, oil, and water	Lb.
29	I	Productivity index	Bbl. per day of gross liquid produced per lb. per sq. in. pressure differential at a specified subsurface datum.
30	I_m	Mass productivity index	Mass fluid produced per day per lb. per sq. in. pressure differential.
31	C	Specific productivity	Productivity index per foot of perforated interval.
32	C_m	Specific mass productivity	Mass productivity index per foot of perforated interval.
33	$Pot._A$	Absolute potential	The rate of production which will exist when the pressure at the bottom of the producing interval open to a well has been reduced to 0 lb. per sq. in., absolute.
34	$Pot._{d,p}$	Datum potential	The rate of production which will exist when the pressure at a specified datum is reduced to a practical minimum.
35	E_I	Installation effectiveness	The ratio of actual production to datum potential.
36	E_A	Absolute effectiveness	The ratio of actual production to absolute potential.

*Thousand cubic feet.

equilibrium conditions. *It is, therefore, proposed to define static pressure as:*

P_d = equilibrium shut-in pressure (2)

where:
P = pressure, lb. per sq. in., gage.
d = datum in feet of depth.

For example, a static pressure of 1000 pounds per square inch in a well at a depth of 6000 feet will be denoted as $P_{6000} = 1000$ lb. per sq. in.

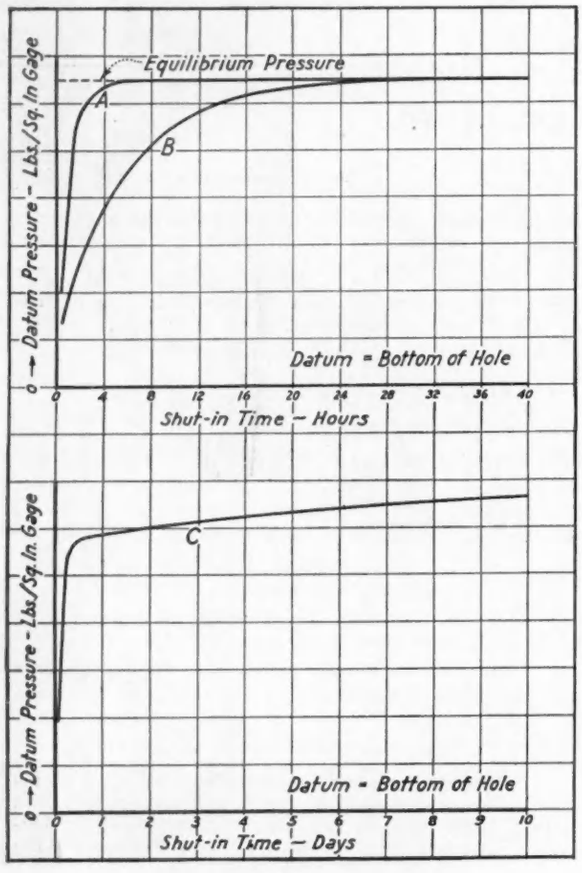
Equilibrium Pressure
A
B
Datum Pressure - Lbs./Sq. In. Gage
Datum = Bottom of Hole
0 4 8 12 16 20 24 28 32 36 40
Shut-in Time — Hours
C
Datum Pressure - Lbs./Sq. In. Gage
Datum = Bottom of Hole
0 1 2 3 4 5 6 7 8 9 10
Shut-in Time — Days

FIGURE 2
Typical Build-up Curves

Temperature measurements should be treated in a similar manner. Sub-surface temperature shall be defined as:

T_d = sub-surface temperature (3)

where:
T = temperature, deg. F.
d = datum in feet of depth.

Producing Sub-Surface Pressure Measurements

1. *Flowing and Gas-Lift Wells:*

Every precaution should be taken to insure equilibrium conditions during the measurement of a producing sub-surface pressure. Pressures measured shortly after a well is put on production or after a change in production rate will often be misleading, inasmuch as they represent transient states. Often the passage of the gage through the tubing disturbs equilibrium; consequently, the gage should be left below the tubing for a sufficient length of time to check the producing rate at that time with the equilibrium rate.

A producing sub-surface pressure should be modified as to datum and production rate. *It is, therefore, proposed to define a producing pressure as:*

$p_{d,R}$ = producing pressure (4)

where:
p = pressure, lb. per sq. in., gage
d = datum in feet of depth
R = production rate in gross barrels per day.

(See Figure 3.)

For example, a producing pressure of 750 lb. per sq. in., gage, in a well at a depth of 6000 feet while producing 500 gross barrels per day will be denoted as $p_{6000,\ 500} = 750$ lb. per sq. in.

2. *Pumping Wells:*

The mechanics of using a recording sub-surface pressure gage in a pumping well depends on the installation in a particular well. Simple means usually can be employed to run the gage integrally with the pump without pulling tubing. In some cases the gage goes through the shoe into the gas anchor, and in other cases it is used in a "sub" between the shoe and the pump. Where an insert pump is not used, a section at the bottom of the gas anchor may be used to accommodate the gage. Figures 4 and 5 illustrate various methods.

As in the case of flowing wells, care must be taken to insure equilibrium conditions lest transient pressure-rate conditions be recorded.

Usually, the datum with which one is concerned is the gage position at the pump. Should pressures at another datum, or mean pressures, be desired, a pressure translation can be made by estimating the fluid density. Factors entering into such an estimation will be:

a. Oil gravity.
b. Cut and salinity of water.
c. Average temperature and pressure prevailing over the interval in which the translation is made.
d. Gas/oil ratio, and the effect of gas in solution at the average pressure and temperature on the oil density.

When appreciable amounts of gas, water, or both gas and water are present, such estimations are hazardous due to the lack of data concerning foam, slippage, and dispersion phenomena. Curves experimentally obtained from producing depth-pressure traverses can also be used for this purpose. Tempera-

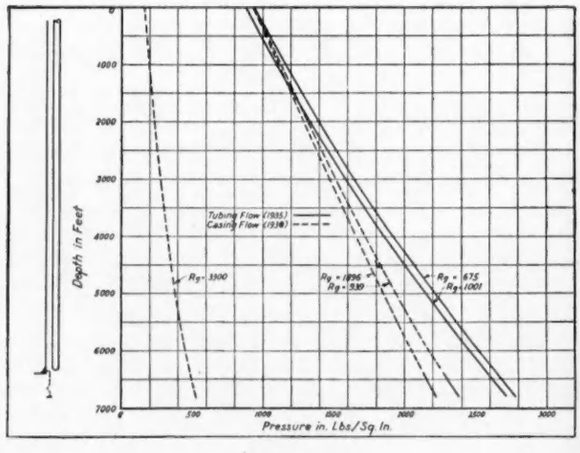

FIGURE 3
Flowing-Pressure Traverses

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ture measurements are made with maximum registering thermometers run integrally with the pressure gage.

Surface Production Measurements

In setting forth the sub-surface pressure-production characteristics of a well, it is obvious that the

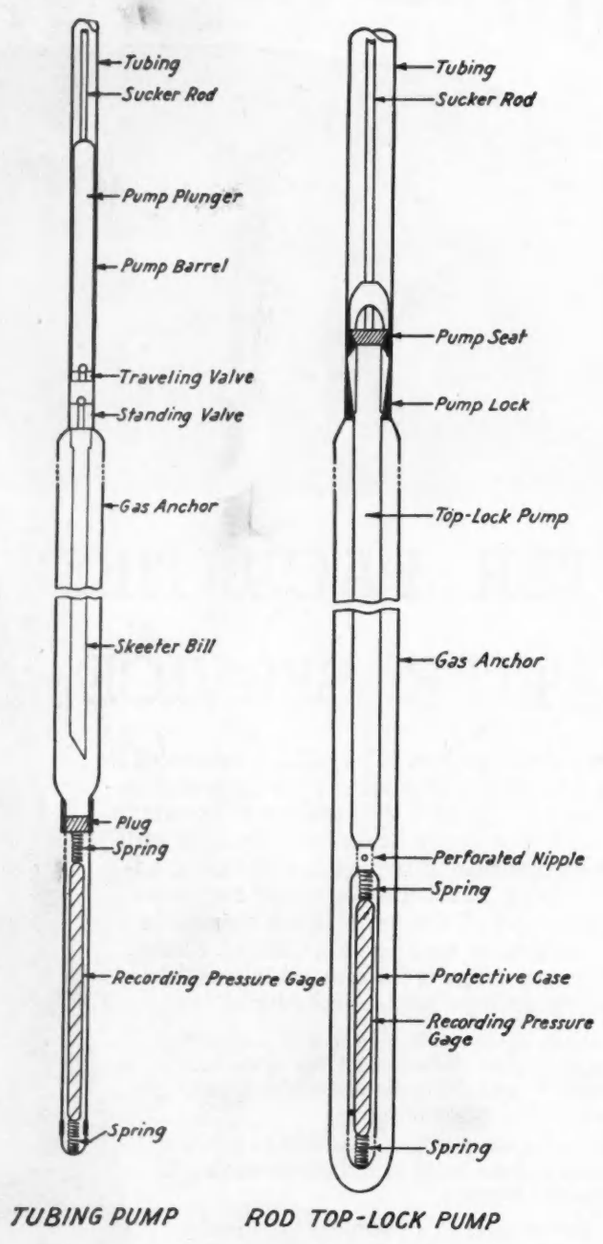


FIGURE 4
Sub-surface Pressure Measurements in pumping wells

accuracy of the result is no greater than that of either measurement. Much has been written concerning the accuracy of sub-surface pressure gages, and precautions should be taken to insure accuracy in production measurements and surface-pressure records.

Fundamental surface measurements are those of tubing and casing pressures, symbolized as:

P_{tbg} = tubing-head pressure, lb. per sq. in., gage (5)
P_{csg} = casinghead pressure, lb. per sq. in., gage (6)

In symbolizing production measurements and terms, the following conventions are proposed:

Liquid rates (at standard conditions of 60 deg. F.):

R_g = gross rate, barrels per day (oil and water) (7)
R_n = net rate, barrels per day (oil) (8)

Gas rates (at standard conditions of 60 deg. F. and 30 in. of mercury):

Q_g = gross M.C.F.* per day (9)
Q_c = circulated M.C.F. per day (10)
Q_f = formation (net) M.C.F. per day (11)

Much confusion can arise from the improper or careless use of the term "gas-oil ratio." The following terms are proposed to clarify the uses:

Q_f/R_n = formation gas/oil ratio (12)
Q_f/R_g = formation gas/liquid ratio (13)
Q_c/R_n = circulated gas/oil ratio (14)
Q_c/R_g = circulated gas/liquid ratio (15)
Q_g/R_n = gross gas/oil ratio (16)
Q_g/R_g = gross gas/liquid ratio (17)

*Thousand cubic feet.

In pumping installations the total gas production is from both the tubing and the casing. When separate gas measurements are made, the following terms are useful:

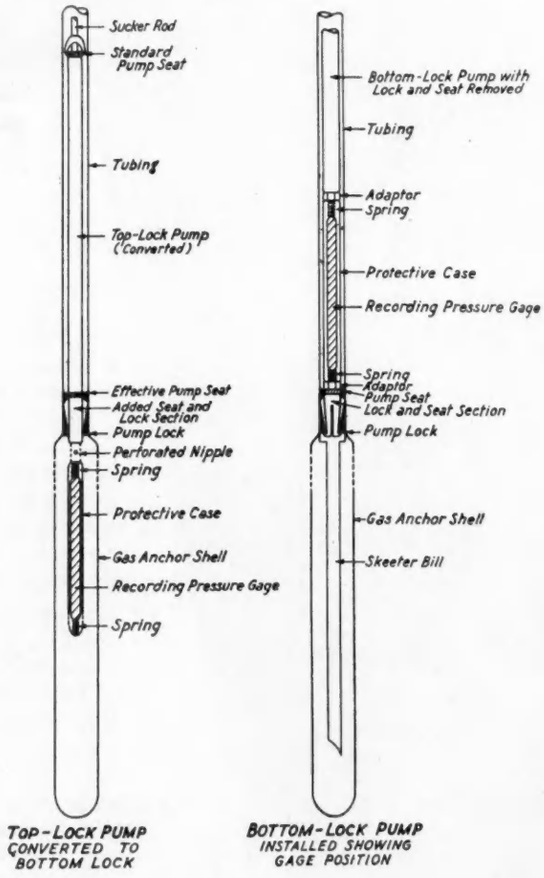


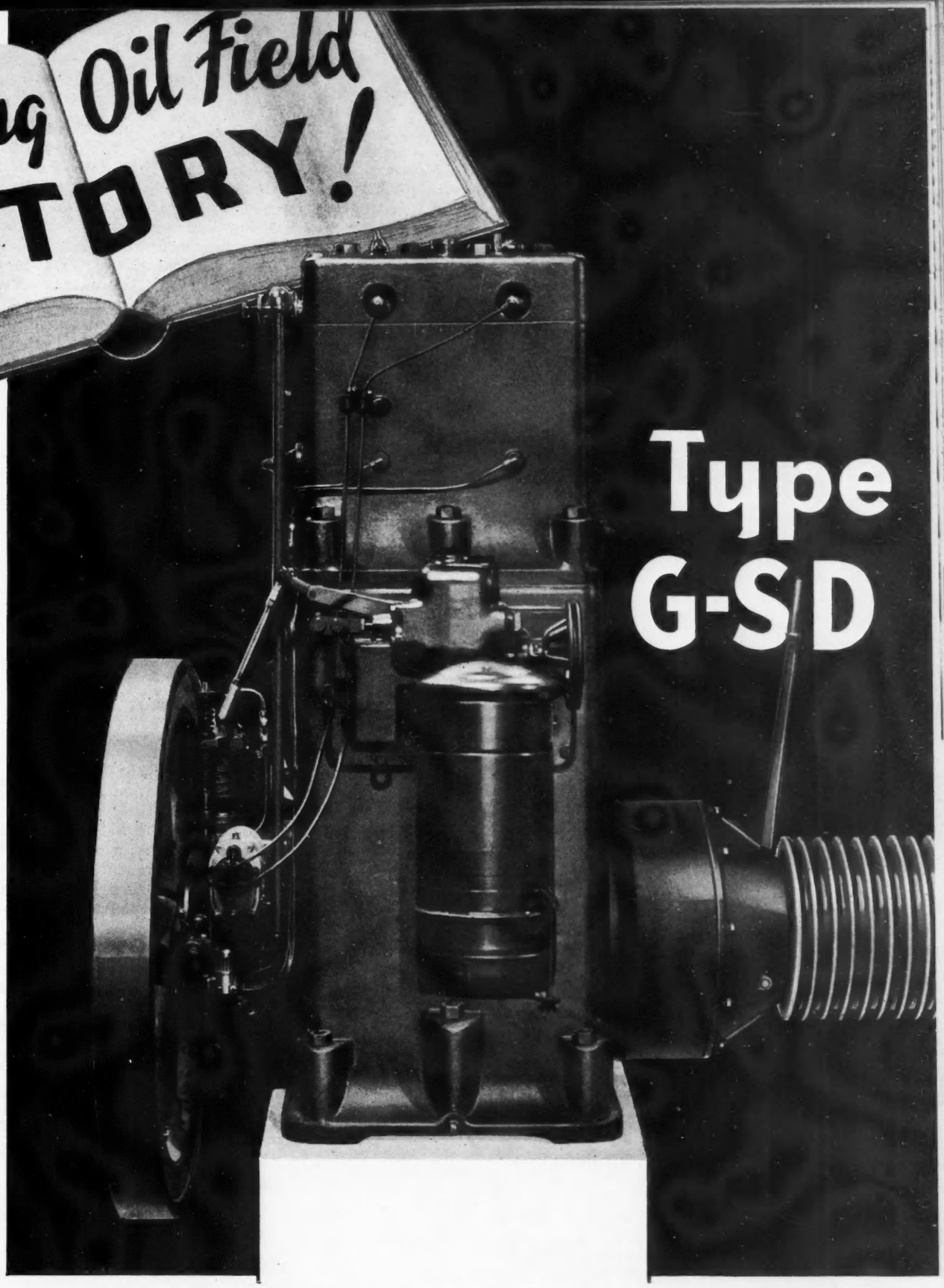
FIGURE 5
Sub-surface Measurements in pumping wells

Q_{tbg}/R_g = tubing gas/liquid ratio (18)
Q_{tbg}/R_n = tubing gas/oil ratio (19)

Terminology of Well-Performance Calculations

Mean Pressure Considerations:

For purposes of comparing pressures measured at several production rates in a single well, or for com-



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paring two or more wells, a common basis must be used in expresing pressures. With ideal sand conditions, such as uniformity in productivity and stratigraphy, and with the entire zone open to production, a fundamental basis for expresing sub-surface pressures would be that of calculating a mean pressure.

A mean pressure is defined as that pressure obtained by measuring the area bounded by the pressure-depth curve, the depth axis, and the two lines corresponding to the top and bottom of the formation open to the well, and dividing by the length of the perforated interval. (20)

See Figure 6.

Then:

$\bar{P}$ = mean static pressure, lb. per sq. in. (21)

$\bar{p}$ = mean producing pressure, lb. per sq. in. (22)

When the static fluid level in a pumping well lies below the top of the perforations, it is necessary to consider the fluid level as the effective top of the perforations.

In many cases the calculation of a mean pressure from measured data necessitates estimation of flowing gradients, with the consequent hazard of introducing error. Such estimations are necessary when:

a. Pressure measurements cannot be made outside the tubing.
b. Static and producing pressures have been measured at only one depth, as in a pumping test.

Other factors which influence the selection of a method of expressing sub-surface pressures are:

a. Unequal permeability and productivity of various portions of a producing zone.
b. Lack of complete penetration in wells producing from a homogeneous body.
c. Values of mean static pressure or datum static pressure other than at the bottom of the hole may depend in part on the manner of shutting in a well, etc.
d. Conditions where producing fluid levels are above the top of the perforations lend themselves to the use of either datum or mean pressures.

Due to reasons such as those outlined above, many engineers resort to the use of a datum pressure, commonly taken at the bottom of the hole or mid-point of the perforations.[6, 7] Such procedure is simple and usually justifiable. When the producing fluid level in a pumping well is below the top of the perforations, the use of mean pressures should yield the most reliable results. In special instances it is desirable to set forth the pressure-production relationship existing at other depths such as the bottom of the tubing, or at a pump intake. In any case, the conditions at hand will dictate the manner in which the measured sub-surface pressures are expressed. Obviously, precise evaluation of average flow characteristics is impossible in a composite horizon of sands and shales where each sand may act as an independent reservoir.

Build-Up Curves:

Measurements of static sub-surface pressures are intended to represent equilibrium conditions between the well bore and the reservoir.

The plot of datum or mean shut-in pressure vs. time is defined as a build-up curve. (23)

(See Figure 2.) The rate at which the pressure builds up in a well is a widely variant function, and in a large number of cases static equilibrium pressure is not attained in a reasonable shut-in period, as determined by inspection of the build-up curve. In all cases discretion should be used in determining how closely the equilibrium pressure should be approached in measurement or estimation. Morris Muskat[8] has commented upon the calculation of equilibrium pressures from incomplete data. Build-up curves are valuable in intermittent flow calculations. A study of build-up characteristics over short time intervals furnishes necessary information as to pressure-time relations for ascertaining proper lifting conditions.

Draw-Down Curves:

It is sometimes found valuable to study the behavior of sub-surface pressure opposite the producing formation immediately after a well is placed on production following a shut-in period.

The plot of producing datum or mean pressure against production time following a shut-in or idle period is defined as a draw-down curve. (24)

Draw-down curves are illustrated by charts from sub-surface recording pressure gages used in pumping tests.[5]

Pressure-Rate Curves:

A study of the producing characteristics of a well is facilitated by the construction of a curve showing sub-surface pressure vs. production relationships.

The plot of equilibrium producing datum or mean pressure against production rate is defined as a pressure-rate curve. (25)

The units in which the production is expressed can greatly influence the shape of the curve. This consideration will be treated later. The datum selected should be opposite the producing interval. If the well is tubed below the top of the perforations, no pressure measurements in the tubing should be used, since they do not represent the true pressure against the sand face. The zero flow, or static pressure, should likewise be measured at the producing-pressure datum.

A pressure-rate curve should be a plot of instantaneous pressure-rate relationships. This necessitates the adjustment of the pressures to a common time should the reservoir pressure decline appreciably during the period of the test. Measurement of static pressure before and after the producing-pressure measurements will give data for this purpose.

Specific Types of Pressure-Rate Curves

Gross Liquid Pressure-Rate Curve:

When the production is expressed as gross barrels per day, the plot of datum or mean pressure vs. gross barrels per day is defined as the "gross liquid Pressure-Rate curve." (26)

Figure 7 illustrates the many shapes this curve can assume in different wells in California fields. When the flow in the sand is viscous, and when small free-gas volumes accompany the oil, the normal shape approaches a straight line.[9] This type of curve neglects the effect of gas in the flow of the gas-liquid mixture in the producing formation.

Many cases have been observed and published in which the pressure-rate curve is substantially linear in spite of conditions of high flow rates accompanied by considerable gas. Often equilibrium conditions are difficult to attain due to nearby well operations. In view of the great number of factors which influence well-performance measurements, it is sur-

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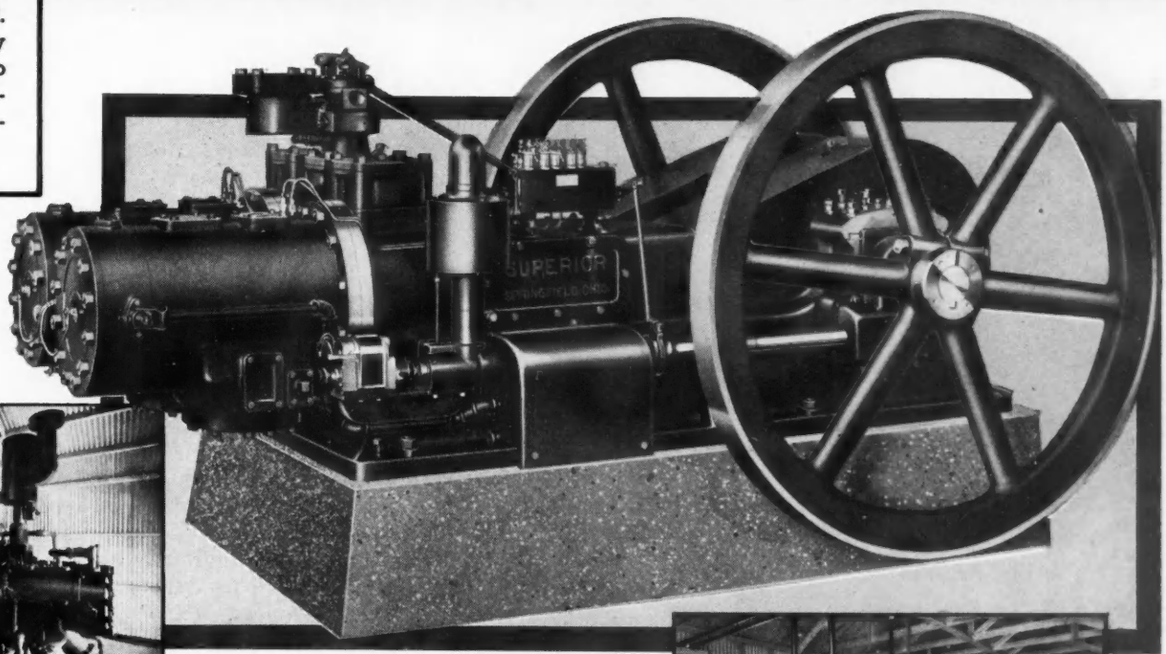

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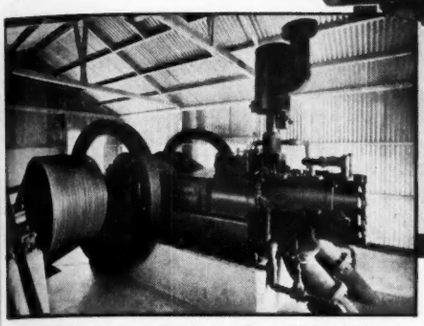
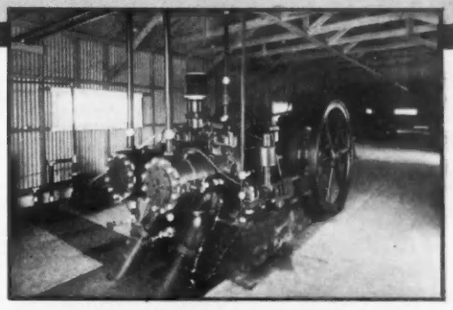
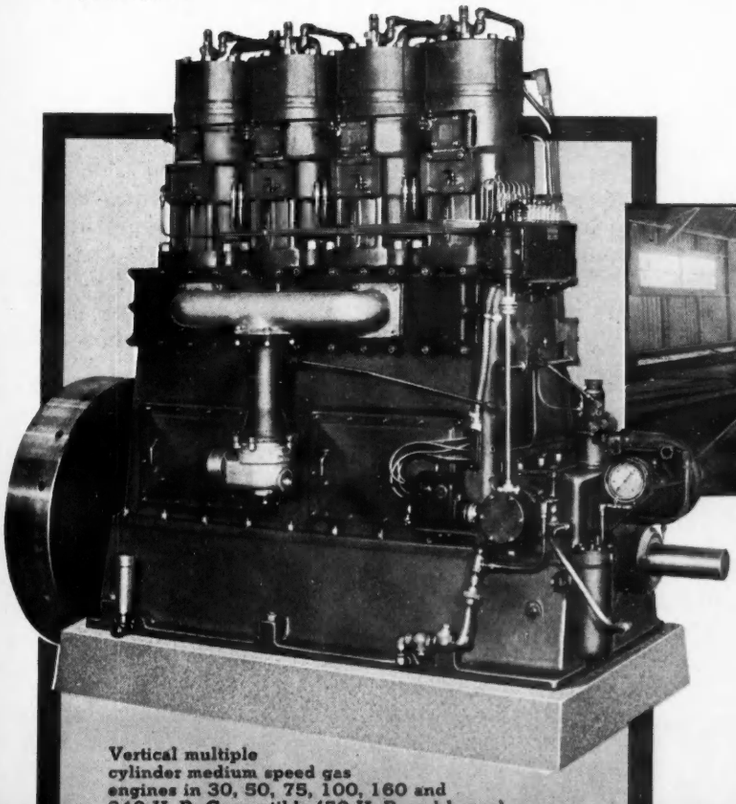


160 H. P. twin horizontal on 150 H. P. geared power.



120 H. P. twin horizontal on large bandwheel power.



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prising that linear pressure-rate curves are as common as they are.

Mass Pressure-Rate Curve:

H. C. Miller, E. S. Burnett, and R. V. Higgins[10] suggested the use of mass* units for production in analyzing oil-well performance.

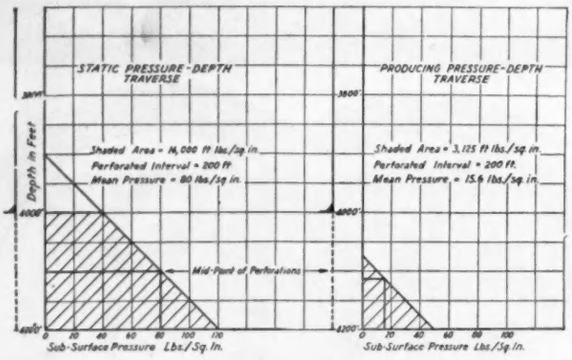

STATIC PRESSURE-DEPTH TRAVERSE
PRODUCING PRESSURE-DEPTH TRAVERSE
Depth in Feet
Shaded Area = 14,000 ft lbs./sq in.
Perforated Interval = 200 ft.
Mean Pressure = 80 lbs./sq in.
Shaded Area = 3,125 ft lbs./sq in.
Perforated Interval = 200 ft.
Mean Pressure = 15.6 lbs./sq in.
Mid-Point of Perforations
Sub-Surface Pressure Lbs./Sq. In.
Sub-Surface Pressure Lbs./Sq. In.

FIGURE 6
Mean Pressures

When the production (gas, oil and water) is expressed as pounds per day, the plot of datum or mean pressure vs. mass rate of fluid production shall be defined as the "mass pressure-rate curve." (27)

Mass rate of fluid production is expressed as pounds of gas, oil, and water per day:

And is symbolized M (28)

Early work has indicated that such procedure tends toward removing the curvature of irregularly-shaped "gross liquid pressure-rate curves."

Productivity Index

A convenient term for expressing the relationship between producing sub-surface pressures and production rates which has come into common usage is:

Productivity index,[8] defined as the barrels per day of gross liquid produced per pound per square inch pressure differential at a specified sub-surface datum. (29)

$I_d = R_g$ per lb. per sq. in.
where:
I = productivity index
d = datum in feet of depth.

For example, a well which produces 400 gross barrels per day with 500 lb. per sq. in. sub-surface pressure at a 4000-foot datum, and 600 gross barrels per day with 300 lb. per sq. in. sub-surface pressure at 4000-foot datum, will have a productivity index:

$$I_{4,000} = \frac{600 - 400}{500 - 300} = 1.0 \text{ gross bbls. per day per lb. per sq. in.}$$

In wells where the producing fluid level is below the top of the perforations, mean pressures are preferred to datum pressures. The productivity index as defined above is useful and significant only when the pressure-rate curve is linear, or substantially so, and its use should be restricted to this condition. Often the pressure-rate curve is not linear (see Figure 6); and in such cases the productivity index, if one were to call it by that name, would be variable with the rate of production and, if stated, would need to be qualified for the given rate at which it is determined.

*The term mass units is not strictly correct, since production is expressed in pounds rather than poundals.

Linearity in pressure-rate curves has been observed under widely variant conditions, but it has been observed that this condition occurs most commonly where formation free gas-oil ratios are low and where wells are in the latter stages of production.

The Mass Productivity Index

The mass productivity index is defined as the mass fluid (including gas) produced per day per pound per square inch pressure differential. Pressures may be expressed as mean pressures or datum pressures.

$I_m = M$ per day per lb. per sq. in. (30)
where:
I_m = mass productivity index
M = pounds of gas, oil and water.

As stated in the section, "Mass Pressure-Rate Curves," the introduction of a mass production rate tends to straighten the "gross pressure-rate curve" in many cases. When linearity is obtained with this method, a useful term for comparative and other purposes is found in the mass productivity index.

Application of Pressure-Rate Curves and Productivity Indices

Specific Productivity Index:

For the purposes of comparing relative productivity from area to area or from well to well, a useful term is "specific productivity,"[10] which expresses productivity per foot of perforated interval.

The production may be expressed in gross liquid or mass units, as previously stated, and the pressure may be expressed as datum pressure or mean pressure. For example:

$C = I/L$ (31)
where:
C = specific productivity
I = productivity index
L = feet of perforated interval.

Or, $C_m = I_m/L$ (32)
where:
C_m = specific mass productivity
I_m = mass productivity index
L = feet of perforated interval.

The use of the term "feet of perforated interval" is not strictly equitable. In cases where stratigraphic knowledge justifies discrimination between productive and non-productive strata in a formation, the use of the actual feet of producing formation is to be preferred.

Estimation of Shut-In Pressures

The shut-in pressure of a well can be estimated by the extrapolation of a suitable pressure-rate curve to zero flow. In cases where the pressure-rate curve is linear, the static pressure may be calculated from an equation, in particular:

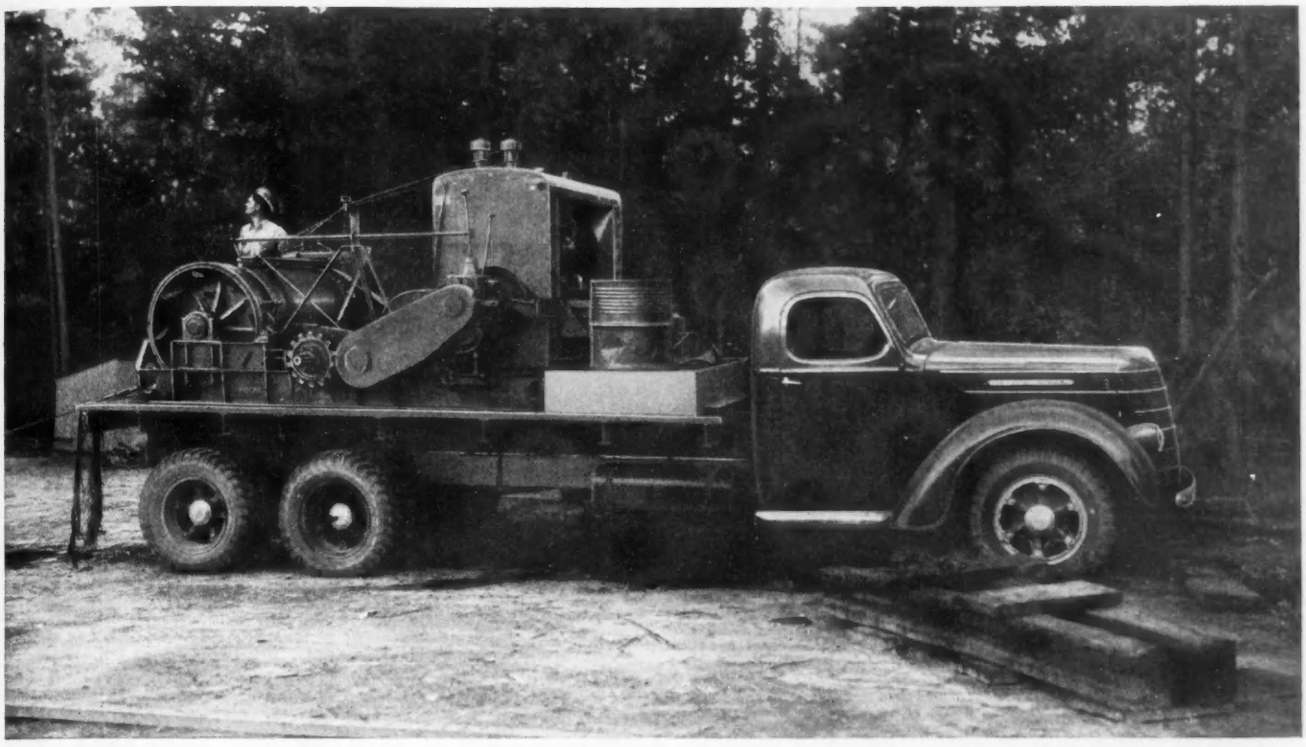
$$P_d = \frac{R}{I} + p_d$$

Other units as previously described may be used.

Potential Estimations

The term "potential" has been construed to embrace a number of definitions. From a standpoint of well performance, it is proposed to limit and quality "potential" as follows:

1. *"Absolute potential," defined as the rate of production which will exist when the pressure at the bot-*



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tom of the producing interval open to a well has been reduced to 0 lb. per sq. in. absolute. This term is symbolized: Pot.$_A$ Absolute potential can be estimated by the extrapolation of a suitable pressure-rate curve to zero pressure, absolute, at the bottom of the producing interval. In cases where the pressure-rate

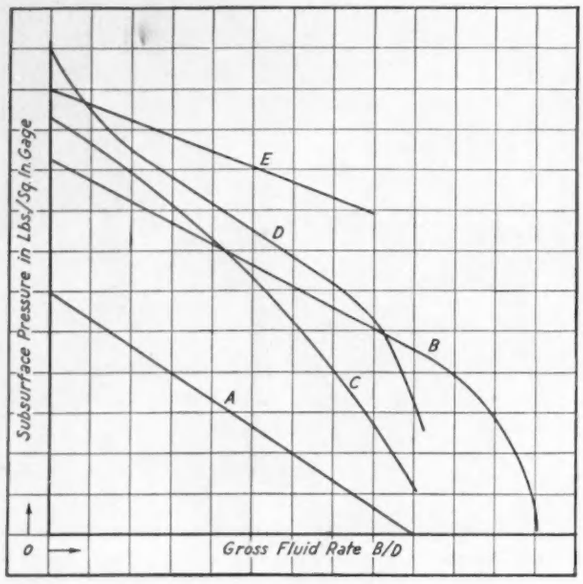

FIGURE 7
Typical Draw-down Curve

curve is linear, Pot.$_A$ may be calculated from an equation, in particular:

$$\text{Pot.}_A = I\,(P_d + 15) \qquad (33)$$

where:
P_d = static pressure at the bottom of the producing interval.

Other units as previously described may be used.

It is realized that absolute zero never can be attained at the bottom of an oil well, but to include vacuum pumping conditions such a definition is requisite.

The absolute potential of a well can be approached closely under pumping conditions only. During the flush period of a well, this term may be applied to proration studies, potential-time declines, etc.

2. *"Datum potential," defined as the rate of production which will exist when the pressure at a specified datum is reduced to a known practical minimum.* This term is symbolized as:

$$\text{Pot.}_{d,p} \qquad (34)$$

where:
d = datum in feet of depth
p = minimum practical producing pressure at d.

Datum potential may be determined from pressure-rate curves, or calculated from productivity indices. For comparative purposes, standardization of datum points and minimum producing pressures is necessary. In explanation: a. The datum potential of a flowing or gas-lift well will be that rate of production which exists when a well is producing against minimum trap pressure, or minimum gathering-system pressure. The practical minimum sub-surface pressure will then be the sum of the well-head back pressure plus the pressure drop from the datum to the surface. b. The datum potential of a pumping well will be that rate of production which exists when the casing pressure is at a minimum value and the producing fluid level is at the pump intake.

Effectiveness of Oil Wells

Often it is desirable to express the ratio between actual and maximum production rates. *"Effectiveness,"* the term selected for this ratio, is to be distinguished from efficiency, a term connoting mechanical considerations.

Installation Effectiveness:

"Installation effectiveness" is defined as the ratio of actual production rate to datum potential. The datum will be the depth of the pump intake in pumping installations.

$$\text{Installation effectiveness, } E_I = R_g/\text{Pot.}_d \qquad (35)$$

Absolute Effectiveness:

"Absolute effectiveness" is defined as the ratio of actual production rate to absolute potential.

$$\text{Absolute effectiveness, } E_A = R_g/\text{Pot.}_A \qquad (36)$$

In addition to its application in pumping wells, *absolute effectiveness* may be used to evaluate different methods of production.

Conclusion

As the study of well performance has developed, general terms of indefinite meaning have been evolved. This paper has limited these terms by introducing specific definitions. To describe adequately the general subject of oil-well performance, new terms have been included. It is believed that understanding of both oral and written discussions will be facilitated if standards are adopted while the subject is still in a formative stage.

Acknowledgment

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Emphasis placed upon the Texas-Louisiana Gulf Coast by publication of "Gulf Coast Numbers" on March 20, 1933, July 16, 1936, and March 16, 1936, has been amply justified by succeeding events and developments. The record of the region since publication of each of these issues has been great, consequently we take pleasure in presenting herewith The OIL WEEKLY'S fourth "Gulf Coast Number." It is a sequel to the three previous issues and brings up to date all data on fields and prospects, on reserves, proven acres, production, etc. In addition much new valuable data are included. Pertinent data are presented in this issue on 537 oil and gas fields, salt domes and prospects, where only 397 were so treated two years ago. The insert supplement map shows fields, prospects, refineries, pipe lines and other information.

New Discoveries Maintain Leadership of Gulf Coast

Reserves attain new peak . . . Record number of discoveries . . . Drilling and exploratory activity at height . . . Production increases

By CHARLES B. LEYENDECKER, Staff Writer

THE Texas-Louisiana Gulf Coast region has had an impressive advancement since publication of THE OIL WEEKLY'S last "Gulf Coast Number," on March 16, 1937, which developments have further entrenched it as one of the world's foremost present and future producing areas.

It is experiencing a peak in drilling activity, and a remarkably large number of discoveries, which are enabling the area to produce its greatest daily recovery in history, and still steadily expand its volume of known unproduced crude reserves to an ever rising record level.

There have been 57 new oil and gas fields found, and a number of salt domes. These discoveries, plus enlargement of previously located field and the finding of new producing levels in old pools, has resulted in a material increase in Gulf Coast reserves.

Present estimates indicate the total ultimate yield from known fields and sands of the Gulf Coast will be 4,403,494,000 barrels, which represents an increase of 1,200,709,000 barrels in 2½ years.

Since the cumulated production of the territory amounts to 1,478,743,910 barrels, it is indicated the region has a discovered unproduced volume of 2,924,750,090 barrels, which represents more than 15 percent of the present known crude reserves of the whole United States. In comparison, reserves of the district were calculated as being 2,041,852,023 barrels on January 1, 1936.

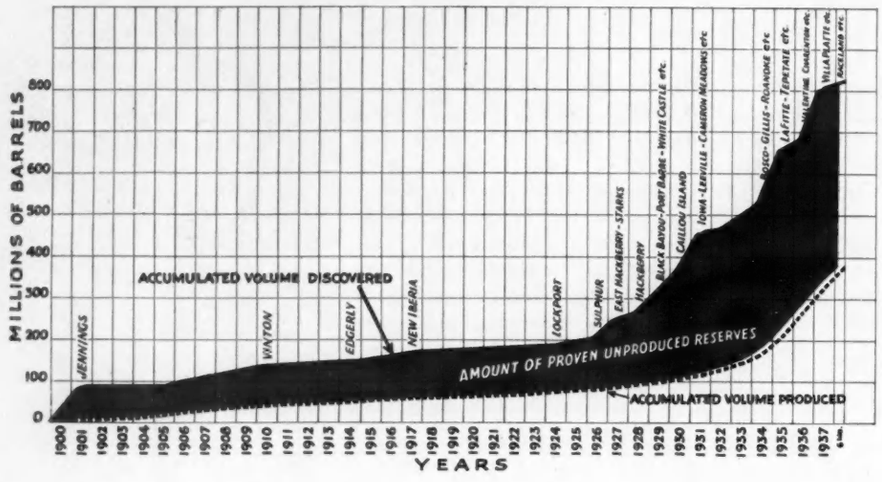
These estimates are conservative, and almost certainly will be revised upward, as many of the fields are only in their preliminary stages of development, thereby affording only limited actual knowledge as to productive area and possible additional deeper pay sands. As such fields are developed further, they likely will add materially to the known reserves.

Moreover, these figures do not give any credit for the new dicoveries that are certain to be made in the future. All estimated yields are based solely upon known supplies today.

Fields Increasing

The number of Gulf Coast fields has been increasing steadily every year in the past decade, as geophysical prospecting has revealed structure after structure.

Prior to the introduction of geo-



Louisiana Gulf Coast reserves are increasing faster than its rising production.

physics on the Gulf Coast in the early 1920's, the Texas Gulf Coast had only about 20 producing fields. Now it has 94. The Louisiana Gulf Coast in the early 1920's had only 4 producing fields. Now it has 72. Thus within a period of a little over 15 years, the number of producing fields of the whole Gulf Coast has increased approximately sevenfold, jumping from 24 to 166.

Of particular importance is that approximately one third (57) of the total number of fields have been opened in the last 2½ years. Of this number 25 were in the Louisiana sector and 32 in Texas.

This remarkable increase in the number of fields has occurred largely through benefit of geophysical prospecting, which has found beneath the flat and featureless plains, coastal bays and marshes many previously unsuspected structures holding oil accumulations.

That it is to be expected that the rates of discoveries will continue in the future, is indicated by the addition of 79 new prospects in South Louisiana and 45 in Texas Gulf Coast since March, 1936. These are areas that have been leased, the majority of which have been worked with geophysical instruments but as yet have not been proved productive of oil.

New Fields Found

There have been 14 new fields and 28 new sands have been discovered in the coastal belt during the first six months of 1938. Six of these new fields were in Texas, and nine in Louisiana. Texas had seven new sands, while Louisiana was getting 28.

Vast Amount of Acreage

Out of a total of approximately 50,000,000 acres that make up the Texas-Louisiana Gulf Coast belt, approximately 125,140 have been proved productive. However, only 87,175 acres of this amount have been developed, the remaining 37,965 acres as yet is to be drilled. Again this represents a sizeable increase, there having been 38,495 acres added to the total proven in the district.

The Texas sector of the coastal belt has 103,265 acres proven, of which 74,325 have been developed. To date these have produced an average of 10,802 barrels per acre, and are expected to yield another 23,894 barrels.

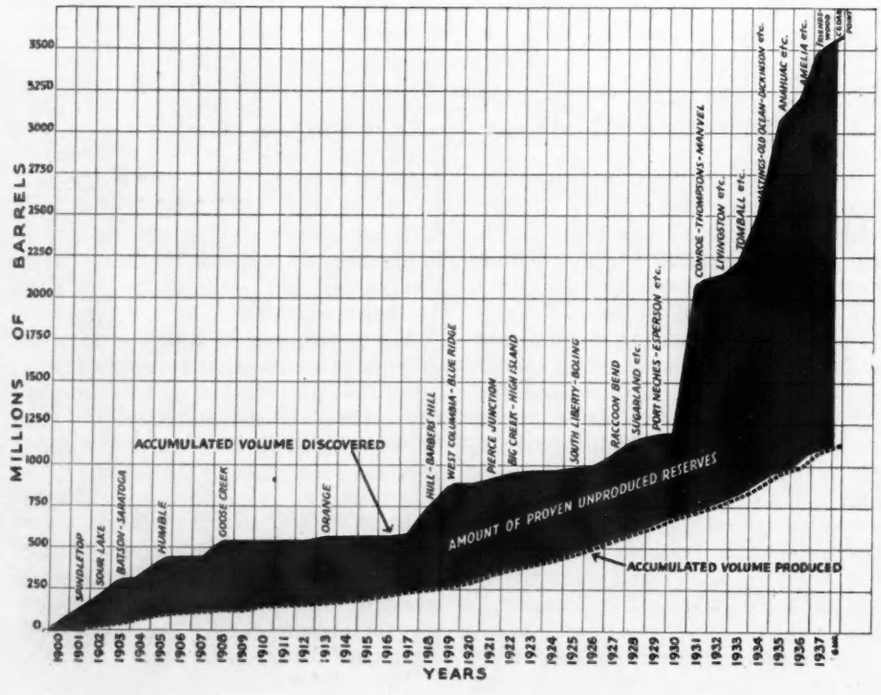
The Louisiana Coast, with 21,975 proven acres, has had an average per acre recovery of 16,529 barrels on July 1, 1938, and is expected to produce another 20,807 barrels per acre in the future.

Number of Wells Increase

The number of wells in the Gulf Coast has increased sharply. The last 2½ years have seen the number of producing wells increase from 4546 to 7125. The largest increase has been in the Texas sector, which has 6094 producing wells today in contrast with 3848 wells on January 1, 1936. Louisiana also has shown a nice gain, having 1031 producing wells on July 1, 1938, whereas it had but 698 on January 1, 1936.

Completions in the Texas Gulf Coast for the first six months of 1938 have shown a five percent increase over the same corresponding period in 1937. In 1938 there were 745 completions as compared to 710 in 1937. Of these completions, 581 were oil wells, 24 gas and 140 failures.

During the first half of 1938 completions in the Louisiana Coast area continued on the upward swing. There were 19 percent more



Texas Gulf Coast is discovering more crude than it is producing despite greater output.

Texas Gulf Coast Production and Reserve Data by Fields and Counties

COUNTY AND FIELD	Age in Years	AMOUNT OF ACREAGE: Acres Proved	Acres Developed	Acres Undeveloped	No. of Wells	‡Daily Field Allowable	DAILY PRODUCTION: *Total Field	Per Well	†BARRELS CUMULATIVE PRODUCTION: Yield to Jan. 1, 1938	Yield to July 1, 1938: Field	Yield to July 1, 1938: Acre	ESTIMATED BARRELS OF ULTIMATE PRODUCTION: January 1, 1937	January 1, 1938: Total	January 1, 1938: Change	July 1, 1938: Total	July 1, 1938: Change	Acre	ESTIMATED RESERVE: Total Field	Per Acre
Austin County, Raccoon Bend	9	2,800	2,800	.....	169	4,141	2,927	17	19,061,000	19,720,679	7,043	65,000,000	65,000,000	.....	65,000,000	.....	23,214	45,279,321	16,171
Allen	6	10	10	.....	1	12	3	3	85,000	86,817	8,682	100,000	100,000	.....	100,000	.....	10,000	13,183	1,318
Damon Mound	37	250	250	.....	34	373	288	8	9,345,000	9,402,175	37,608	10,500,000	10,500,000	.....	10,500,000	.....	42,000	1,097,825	4,391
Danbury	8	75	40	35	3	300	231	77	9,000	42,728	570	4,000	500,000	[2]496,000	500,000	.....	6,666	457,272	6,097
Hastings	3	5,000	4,000	1,000	550	23,699	18,295	33	8,858,000	12,500,420	2,500	375,000,000	400,000,000	[7]25,000,000	400,000,000	.....	80,000	387,499,580	77,499
Hoskins Mound	13	.....	.....	.....	.....	.....	.....	.....	32,000	32,000	.....	32,000	32,000	[5]	32,000	.....	.....	.....	.....
Lochridge	2	1,000	600	400	36	2,461	1,210	34	280,000	508,508	509	15,000,000	15,000,000	.....	15,000,000	.....	15,000	14,491,492	14,491
Manvel	6	1,900	1,800	100	164	11,451	8,810	54	0,838,000	12,488,973	6,573	50,000,000	50,000,000	.....	50,000,000	.....	26,316	37,511,027	19,743
Old Ocean	4	4,000	1,500	2,500	13	4,061	4,210	323	735,000	1,357,163	339	7,000,000	35,000,000	[3-7]28,000,000	100,000,000	[3]765,000,000	25,000	98,642,837	24,661
Pledger	5	160	160	.....	.....	.....	Gas	.....	17,000	17,000	Gas	17,000	17,000	[5]	17,000	.....	.....	.....	.....
Sandy Point	1	1,100	200	900	7	391	326	47	52,000	105,725	96	.....	6,000,000	[2]6,000,000	6,000,000	.....	5,455	5,894,275	5,358
Stratton Ridge	16	20	20	.....	.....	.....	.....	.....	12,000	12,000	600	12,000	12,000	.....	12,000	.....	.....	.....	.....
West Columbia	23	600	500	100	69	4,512	4,470	65	80,318,000	81,082,458	135,137	90,000,000	100,000,000	[3-7]10,000,000	100,000,000	.....	16,666	18,917,542	31,529
Brazoria County, total 12 fields	....	14,115	9,080	5,035	877	47,220	37,843	43	110,581,000	117,635,967	8,334	547,665,000	617,161,000	69,496,000	682,161,000	65,000,000	48,329	564,525,033	39,995
Anahuac	3	6,500	4,500	2,000	241	9,826	7,262	30	7,281,000	8,710,965	1,340	300,000,000	300,000,000	.....	300,000,000	.....	46,153	291,289,035	44,813
Barbers Hill	21	450	450	.....	168	10,375	9,196	55	61,001,000	62,764,313	139,476	80,000,000	80,000,000	.....	80,000,000	.....	177,777	17,235,687	38,301
Cedar Bayou	½	20	.....	20	.....	.....	.....	.....	.....	680	34	.....	250,000	[2]250,000	50,000	[—8]200,000	2,500	49,320	2,466
Cedar Point	½	500	100	400	4	400	299	75	.....	39,679	79	.....	.....	.....	36,000,000	[2]36,000,000	72,000	35,960,321	71,920
Cotton and South Cotton Lake	2	1,000	500	500	23	1,671	1,363	59	384,000	619,023	619	2,000,000	6,000,000	[2]4,000,000	6,000,000	.....	6,000	5,380,997	5,381
Lost Lake	9	85	85	.....	8	135	122	15	893,000	913,922	10,752	1,500,000	1,500,000	.....	1,500,000	.....	17,647	586,078	6,895
Seabreeze-Willowslough	2	3,000	300	2,700	10	622	493	49	33,000	143,086	48	1,000,000	20,000,000	[3]19,000,000	20,000,000	.....	6,666	19,856,914	6,619
Turtle Bay	2	1,100	500	600	31	1,373	1,102	36	485,000	679,730	618	10,000,000	10,000,000	.....	10,000,000	.....	9,090	9,320,270	8,473
Chambers County, Total 8 fields	....	12,655	6,435	6,220	485	24,762	19,837	41	70,077,000	73,871,398	5,837	394,500,000	417,750,000	23,250,000	453,550,000	35,800,000	35,840	379,678,602	30,002
Colorado County, Garwood field	5	50	25	25	.....	.....	.....	.....	2,000	2,242	45	100,000	100,000	.....	100,000	.....	2,000	97,758	11,955
Big Creek	15	250	250	.....	26	743	582	22	9,345,000	9,463,175	37,853	10,500,000	10,500,000	.....	10,500,000	.....	42,000	1,036,825	4,147
Blue Ridge	19	375	375	.....	54	802	791	15	10,544,000	10,668,088	28,448	12,000,000	12,000,000	.....	12,000,000	.....	32,000	1,331,912	3,552
Nash	11	120	120	.....	.....	.....	.....	.....	1,667,000	1,667,811	13,898	1,750,000	1,750,000	.....	1,750,000	.....	14,583	82,189	685
Orchard	11	150	150	.....	15	357	395	26	3,309,000	3,379,873	22,532	5,000,000	5,000,000	.....	5,000,000	.....	33,333	1,620,127	10,800
Sugarland	9	1,175	1,175	.....	51	2,912	2,911	57	26,193,000	26,761,242	22,776	90,000,000	90,000,000	.....	90,000,000	.....	76,595	63,238,758	53,820
Thompsons	6	3,880	3,880	.....	217	12,972	9,220	42	25,816,000	27,691,323	7,137	210,000,000	210,000,000	.....	210,000,000	.....	54,123	182,308,677	46,986
Ft. Bend County, total 6 fields	....	5,950	5,950	.....	363	17,786	13,899	38	76,874,000	79,631,512	13,383	329,250,000	329,250,000	.....	329,250,000	.....	55,336	249,618,488	41,952
Dickinson	3	4,150	2,100	2,050	137	8,062	5,881	43	2,942,000	4,057,532	977	40,000,000	40,000,000	.....	40,000,000	.....	9,638	35,942,468	8,661
Green Lake	3	50	50	.....	1	19	21	21	32,000	35,008	700	150,000	150,000	.....	150,000	.....	3,000	114,992	2,300
High Island	14	300	230	70	68	2,679	1,485	22	14,295,000	14,669,339	48,897	25,500,000	28,000,000	[1]2,500,000	28,000,000	.....	93,333	13,330,661	44,435
Hitchcock	1	100	50	50	4	400	285	71	18,000	52,980	530	500,000	500,000	.....	500,000	.....	5,000	447,020	4,470
Galveston County, total 4 fields	....	4,600	2,430	2,170	210	11,160	7,672	37	17,287,000	18,814,859	4,090	66,150,000	68,650,000	2,500,000	68,650,000	.....	14,923	49,835,141	.....
Ariola	5	100	100	.....	10	575	460	46	1,678,000	1,780,088	17,800	4,000,000	4,000,000	.....	4,000,000	.....	40,000	2,219,912	22,199
Batson	34	600	600	.....	214	1,983	1,587	7	38,283,000	38,572,341	64,287	45,000,000	45,000,000	.....	45,000,000	.....	75,000	6,427,659	10,713
Saratoga	36	550	550	.....	230	1,008	870	4	28,453,000	28,610,962	52,019	30,000,000	30,000,000	.....	30,000,000	.....	54,545	1,389,038	2,526
Silsbee	1	1,000	500	500	29	1,943	1,414	49	435,000	717,673	7,176	9,000,000	9,000,000	.....	9,000,000	.....	9,000	8,282,327	8,282
Sour Lake	15	900	900	.....	152	1,491	1,172	8	78,553,000	78,771,840	87,524	90,000,000	90,000,000	.....	90,000,000	.....	100,000	11,228,160	12,475
Hardin County, total 5 fields	....	3,150	2,650	500	635	7,000	5,503	9	147,402,000	148,452,904	47,127	178,000,000	178,000,000	.....	178,000,000	.....	56,507	29,547,096	9,380
Bammel	1	300	40	260	1	.....	14	14	8,000	8,729	29	.....	500,000	[2]500,000	500,000	.....	1,667	491,271	1,638
Clear Lake	3 mo.	100	20	80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,000,000	[2]1,000,000	10,000	1,000,000	10,000
Clintom	1½	225	100	125	6	400	620	103	8,500	45,647	203	1,000,000	1,000,000	.....	2,000,000	[6]1,000,000	8,889	1,954,353	8,680
Eureka	3	350	80	270	7	500	740	106	33,000	85,174	243	500,000	500,000	.....	9,500,000	[6]9,000,000	27,143	9,414,826	26,900
Fairbanks	6 mo.	800	300	500	31	1,786	2,060	66	.....	111,806	140	.....	.....	.....	23,000,000	[2]23,000,000	28,750	22,888,194	2,861
Friendswood	1	5,000	500	4,500	57	2,992	2,003	35	95,000	419,647	84	.....	250,000,000	[2]250,000,000	250,000,000	.....	50,000	249,580,353	4,992
Goose Creek	31	1,000	1,000	.....	95	2,009	1,644	17	76,091,000	76,375,794	76,376	90,000,000	90,000,000	.....	90,000,000	.....	90,000	13,624,206	13,624
Hockley	14	10	10	.....	.....	.....	.....	.....	16,000	16,000	1,600	16,000	16,000	[5]	16,000	.....	1,600	.....	.....
Humble	32	2,400	2,400	.....	281	4,123	3,215	11	122,595,000	123,200,284	51,333	130,500,000	130,500,000	.....	130,500,000	.....	54,375	7,299,716	3,042
Mykawa	8	300	300	.....	31	1,576	962	31	3,019,000	3,266,666	10,889	5,000,000	5,000,000	.....	5,000,000	.....	16,667	1,733,334	5,778
Pierce Junction	16	320	320	.....	74	4,690	3,128	42	31,761,000	32,330,401	101,032	40,000,000	40,000,000	.....	40,000,000	.....	125,000	7,669,599	23,967
Satsuma	2	800	220	580	10	372	380	38	153,000	214,611	268	4,000,000	4,000,000	.....	4,000,000	.....	5,000	3,785,389	3,732
South Houston	3	650	630	20	94	3,828	3,080	33	3,258,000	3,850,562	5,924	10,000,000	10,000,000	.....	10,000,000	.....	15,384	6,149,438	9,461
Tomball	4	8,150	7,600	550	354	8,695	6,340	18	8,801,000	10,070,009	1,236	50,000,000	50,000,000	.....	50,000,000	.....	6,135	39,929,991	4,899
Harris County, total 14 fields	....	20,405	3,520	6,885	1,041	30,971	24,186	23	245,838,500	249,995,330	12,252	331,016,000	581,516,000	250,500,000	615,516,000	34,000,000	30,165	365,520,670	17,913

* Seven days. ‡ Six days. † Cumulated production from oil company records.
[1] Flank development. [2] New field. [3] New sand. [4] Development of new sand. [5] Field depleted. [6] Commercial oil. [7] Extensions. [8] Salt water encroachment. [9] First commercial well. [10] Field abandoned.

(Table continued next page)

Texas Gulf Coast Production and Reserve Data by Fields and Counties—(Cont'd)

COUNTY AND FIELD	Age in Years	AMOUNT OF ACREAGE: Acres Proved	Acres Developed	Acres Undeveloped	No. of Wells	‡Daily Field Allowable	DAILY PRODUCTION: *Total Field	Per Well	†BARRELS CUMULATIVE PRODUCTION: Yield to Jan. 1, 1938	Yield to July 1, 1938: Field	Acre	ESTIMATED BARRELS OF ULTIMATE PRODUCTION: January 1, 1937	January 1, 1938: Total	January 1, 1938: Change	July 1, 1938: Total	July 1, 1938: Change	Acre	ESTIMATED RESERVE: Total Field	Per Acre
Jasper County, Rockland field	20	20							34,000	34,000		34,000	34,000	[5]	34,000		1,700		
Amelia	2	1,300	1,250	50	113	4,468	3,309	29	1,410,000	2,068,569	1,591	20,000,000	20,000,000		20,000,000		15,385	17,931,431	13,793
Big Hill	15	20	20						14,000	14,000	7,000	14,000	14,000	[5]	14,000		700		
Cheek	6 mo.	100	20	80	1	130	126	126		19,993	200				3,000,000	[2]3,000,000	30,000	2,980,007	29,800
Clam Lake	6 mo.	100	20	80	1	100	71	71		16,063	161		2,500,000	[2]2,500,000	2,500,000		25,000	2,483,937	24,839
Fannett	10	100	100		20	727	310	16	2,216,000	2,312,390	23,124	3,500,000	3,500,000		3,500,000		35,000	1,187,610	11,876
Labelle	1	180	40	140	2	20	892	446	15,000	103,892	[6] 577		1,000,000	[2]1,000,000	1,000,000		5,556	896,108	4,978
Nome	2	1,000	700	300	43	1,718	1,415	33	648,000	901,263	9,013	10,000,000	10,000,000		10,000,000		10,000	9,098,737	9,099
North Creek	1	550	40	510	2	109	76	38	30,000	54,101	98		5,000,000	[2]5,000,000	5,000,000		9,090	4,945,899	8,993
Spindletop	37	425	425		141	2,866	2,030	14	123,915,000	124,308,963	292,492	140,000,000	140,000,000		140,000,000		329,411	15,691,037	36,920
West Beaumont	2	500	350	150	36	1,643	1,410	39	370,000	603,653	1,207	4,000,000	4,000,000		4,000,000		8,000	3,396,347	6,793
Jefferson County, total 10 fields	....	4,275	2,965	1,310	359	11,781	9,639	27	128,618,000	130,402,887	30,503	177,514,000	186,014,000	8,500,000	189,014,000	3,000,000	44,213	58,611,113	13,710
Cleveland	4	600	450	150	9	459	364	41	931,000	996,102	1,660	2,500,000	2,500,000		2,500,000		4,167	1,503,898	2,506
Esperson	9	500	450	50	36	1,600	1,197	33	4,803,000	5,036,353	10,073	9,000,000	9,000,000		9,000,000		18,000	3,963,647	7,927
Hankamer	9	375	375		32	1,622	947	30	4,910,000	5,121,847	13,658	7,500,000	7,500,000		7,500,000		20,000	2,378,153	6,342
Hardin	3	1,200	400	800	55	4,221	4,715	86	415,000	1,052,356	877	1,000,000	8,500,000	[3] [7]7,500,000	8,500,000		7,083	7,447,644	6,206
Hull	20	750	700	50	210	9,737	7,160	34	84,519,000	86,008,901	1,147	100,000,000	100,000,000		100,000,000		133,333	13,991,099	18,654
Moss Bluff	8	20	20						180,000	180,000	9,000	180,000	180,000		180,000				
North Dayton	33	75	75		12	155	97	8	2,298,000	2,315,544	3,087	2,500,000	2,500,000		2,500,000		33,333	184,456	2,459
South Liberty	13	230	230		45	687	528	12	15,299,000	15,391,345	66,918	20,000,000	20,000,000		20,000,000		86,956	4,608,655	20,038
Liberty County, total 8 fields	....	3,750	2,700	1,050	399	18,481	15,008	38	113,355,000	116,102,448	30,960	142,680,000	150,180,000	7,500,000	150,180,000		40,048	34,077,552	9,087
Big Hill	27	20	20						217,000	217,000	10,850	217,000	217,000		217,000				
Buckeye-Wilson Creek	5	100	70	30	4	275	152	38	658,000	700,279	7,003	2,000,000	2,500,000	[2]500,000	2,500,000		25,000	1,799,721	17,997
Hawkinsville	2	10	10						2,000	2,000	200	2,000	2,000		2,000				
Markham	29	220	200	20	40	1,961	1,420	36	6,574,000	6,867,728	31,217	10,500,000	10,500,000		10,500,000		47,727	3,632,272	16,510
McCroskey	5 mo.	100	40	60	3	70	156	52		10,393	104				1,000,000	[2]1,000,000	10,000	989,607	9,896
Palacios	1	360	80	280	3	122	96	32	34,000	69,953	194		1,000,000	[2]1,000,000	1,000,000		2,778	930,047	2,583
South Bay City	2	500	150	350	9	1,481	1,020	113	179,000	371,949	744	3,000,000	3,000,000		3,000,000		6,000	2,628,051	5,256
Van Vleck	4	1,000	600	400	28	2,688	1,771	63	1,193,000	1,557,450	1,557	20,000,000	20,000,000		20,000,000		20,000	18,442,550	18,443
Matagorda County, total 8 fields	....	2,310	1,170	1,140	87	6,597	4,615	53	8,857,000	9,796,752	4,241	35,719,000	37,219,000	1,500,000	38,219,000	1,000,000	16,545	28,422,248	12,313
Montgomery County, Conroe field	6	17,600	17,520	80	938	40,074	30,860	33	86,876,000	92,719,532	5,268	670,000,000	670,000,000		670,000,000		38,068	577,280,468	32,800
Newton County, Call field	1	100	20	80	1	50	30	30	6,500	9,704	97		1,500,000	[2]1,500,000	1,500,000		15,000	1,490,296	14,903
Orange	24	800	600	200	57	1,631	1,365	24	32,238,000	32,434,223	40,542	35,000,000	36,000,000	[3]1,000,000	40,000,000	[4]4,000,000	50,000	7,565,777	9,457
Port Neches	9	225	150	75	19	1,450	1,010	53	4,480,000	4,692,888	20,857	12,000,000	12,000,000		12,000,000		53,333	7,307,112	32,476
Orange County, total 2 fields	....	1,025	750	275	76	3,081	2,375	31	36,718,000	37,127,111	36,222	47,000,000	48,000,000	1,000,000	52,000,000	4,000,000	50,732	14,872,889	14,510
Ace	5	50	50		2	80	60	30,000	103,000	114,390	2,288	500,000	500,000		5,000,000		10,000	385,610	7,712
Livingston	5	2,100	1,600	500	88	2,363	1,755	20	4,289,000	4,645,592	2,212	15,750,000	15,750,000		15,750,000		7,500	11,104,408	5,288
Tegno	1½	1,000	350	650	31	2,276	1,772	57	465,000	788,606	78,860	5,000,000	10,000,000	[3]5,000,000	10,000,000		10,000	9,211,394	9,211
Polk County, total 3 fields	....	3,150	2,000	1,150	121	4,719	3,587	30	4,857,000	5,548,588	1,761	21,250,000	26,250,000	5,000,000	26,250,000		8,333	20,701,412	6,572
Tyler County, Spurger field	1	600	200	400	8	872	715	89	70,000	190,551	318		5,000,000	[2]5,000,000	5,000,000		8,333	4,809,449	8,016
Waller County, San Felipe field	4	10	10			10	9	9	20,000	20,929	2,093	100,000	100,000		100,000		10,000	79,071	7,907
Brenham	23	50	50		22	35	25	1	352,000	356,005	7,120	500,000	500,000		500,000		10,000	143,995	2,880
Clay Creek	9	350	350		52	677	489	9	3,954,000	4,049,702	11,571	5,500,000	5,500,000		5,500,000		15,714	1,450,298	4,144
Washington County, total 2 fields	....	400	400		74	712	514	7	4,306,000	4,405,707	11,014	6,000,000	6,000,000		6,000,000		15,000	1,594,293	3,986
Boling	11	225	200	25	84	1,887	1,341	16	5,601,000	5,887,205	26,165	6,500,000	8,000,000	[1]1,500,000	8,000,000		35,555	2,112,795	9,390
Louise	4	1,500	1,500		35	1,592	1,205	34	1,747,000	1,989,998	1,327	5,500,000	5,500,000		5,500,000		3,667	3,510,002	2,340
Magnet	1	1,000	500	500	19	1,054	755	40	136,000	291,004	291	9,000,000	9,000,000		9,000,000		9,000	8,780,996	8,709
Pickett Ridge	3	1,200	700	500	40	2,290	1,894	47	1,425,000	1,689,291	1,408	10,000,000	10,000,000		10,000,000		8,333	8,310,709	6,926
Withers-Five Corners	2	2,400	1,000	1,400	72	3,461	3,008	42	805,000	1,165,772	486	20,000,000	20,000,000		20,000,000		8,333	18,834,228	7,848
Wharton County, total 5 fields	....	6,325	3,900	2,425	250	10,284	8,203	33	9,714,000	11,023,270	1,743	51,000,000	52,500,000	1,500,000	52,500,000		8,300	41,476,730	6,558
TOTAL 94 FIELDS	....	103,265	74,325	28,840	6,094	239,701	187,422	31	1,080,554,000	1,115,506,370	10,802	3,062,978,000	3,440,224,000	377,246,000	3,583,024,000	142,800,000	34,696	2,467,517,630	23,894

*Seven days. ‡Six days. †Cumulated production for oil company records.
[1] Flank development. [2] New field. [3] New sand. [4] Development of new sand. [5] Field depleted. [6] Commercial oil. [7] Extensions. [8] Salt water encroachment. [9] First commercial well. [10] Field abandoned.

* Seven days. ‡ Six days. † Cumulated production for oil company records.
[1] Flank development. [2] New field. [3] New sand. [4] Development of new sand. [5] Field depleted. [6] Commercial oil. [7] Extensions. [8] Salt water encroachment. [9] First commercial well. [10] Field abandoned.

Louisiana Gulf Coast Production and Reserve Data Summary by Fields and Parishes

PARISH AND FIELD	Age in Years	AMOUNT OF ACREAGE: Acres Proved	Acres Developed	Acres Undeveloped	No. of Wells	Daily Field Allowable	DAILY PRODUCTION: Total Field	Per Well	BARRELS CUMULATIVE PRODUCTION: Yield to Jan. 1, 1938	Yield to July 1, 1938: Field	Acre	ESTIMATED BARRELS OF ULTIMATE PRODUCTION: January 1, 1937	January 1, 1938: Total	January 1, 1938: Change	July 1, 1938: Total	July 1, 1938: Change	Acre	ESTIMATED RESERVE: Total Field	Per Acre
Bayou Mallet	2	100	50	50	4		198	50	120,000	140,556	1,406	1,000,000	1,000,000		1,000,000		10,000	859,444	8.594
Bosco (Cankton)	4	1,500	1,500		60	5,700	5,903	98	15,010,000	16,110,469	10,740	30,000,000	30,000,000		30,000,000		20,000	13,889,531	9,260
Jennings	37	800	500	300	120	17,600	20,706	173	55,317,000	58,617,073	73,271	60,000,000	70,000,000	[1]10,000,000	90,000,000	[1]20,000,000	112,500	31,382,927	39,228
North Crowley	1	800	250	550	6	750	596	99	30,000	168,160	210		8,000,000	[2]8,000,000	8,000,000		10,000	7,831,840	9,790
South Crowley	1½	100	20	80	1		10	10		1,852	19				1,000,000	[2]1,000,000	10,000	998,148	9,981
Tepetate	3	1,500		1,500	53	5,700	5,582	105	3,727,000	4,738,102	3,159	20,000,000	20,000,000		20,000,000		13,333	15,261,898	10,174
Acadia Parish, total 6 fields	....	4,800	2,320	2,480	244	29,750	32,995	135	74,204,000	79,776,212	16,617	111,000,000	129,000,000	18,000,000	150,000,000	21,000,000	31,250	70,223,788	14,630
Darrow	5	200	100	100	9	2,950	2,848	316	1,510,000	1,631,112	8,156	15,000,000	15,000,000		15,000,000		75,000	13,368,888	66,844
Sorrento	9	100	75	25	4	450	370	93	847,000	895,829	8,958	2,000,000	2,000,000		2,000,000		20,000	1,104,171	11,041
Ascension Parish, total 2 fields	....	300	175	125	13	3,400	3,218	248	2,357,000	2,526,941	8,403	17,000,000	17,000,000		17,000,000		56,666	14,473,059	48,243
Beauregard Parish, Bancroft	⅙	100	20	80	1	(*)	(*)								100,000	[3]100,000	10,000	100,000	1,000
Edgerly	25	215	215		12	200	151	13	8,481,000	8,511,059	39,586	10,000,000	10,000,000		10,000,000		46,511	1,488,941	6,925
Gillis English Bayou	3	1,000	800	200	61	9,000	9,098	149	13,012,000	14,672,861	14,673	22,000,000	22,000,000		22,000,000		22,000	7,327,139	7,327
Iowa	6	1,000	950	50	53	15,000	14,535	274	29,255,000	32,095,861	32,096	45,000,000	45,000,000		45,000,000		45,000	12,904,139	12,904
Lockport	13	300	300		19	1,000	1,014	53	14,465,000	14,648,751	48,829	20,000,000	20,000,000		20,000,000		66,667	5,351,249	17,837
Starks	10	95	75	20	21	600	583	28	2,369,000	2,476,790	26,071	4,000,000	4,000,000		4,000,000		42,105	1,523,210	16,033
Sulphur	11	200	150	50	59	3,000	2,992	51	11,460,000	11,965,291	59,826	20,000,000	20,000,000		20,000,000		100,000	8,034,709	40,174
Vinton	28	270	270		75	1,300	1,310	17	42,601,000	42,824,749	158,610	50,000,000	50,000,000		50,000,000		185,185	7,175,251	26,575
Calcasieu Parish, total 7 fields	....	3,080	2,760	320	328	30,100	29,683	90	121,643,000	127,195,362	41,298	171,000,000	171,000,000		171,000,000		55,519	43,804,638	14,222
Big Lake	2	150	50	100	2		70	35	50,000	65,574	437	1,000,000	1,000,000		1,000,000		6,667	934,426	6,230
Black Bayou	8	200	100	20	18	3,400	3,631	203	4,695,000	5,366,988	26,835	10,000,000	10,000,000		10,000,000		50,000	4,633,012	23,165
Creole	½	100	20	80	1		221	221		23,416	234				2,000,000	[2]2,000,000	20,000	1,976,584	19,766
Cameron Meadows	6	350	230	120	30	3,800	3,697	123	4,943,000	5,650,485	16,144	15,000,000	15,000,000		15,000,000		42,857	9,349,515	26,713
East Hackberry	10	500	460	40	54	7,000	6,689	124	18,811,000	20,155,415	40,310	25,000,000	35,000,000	[7-3]10,000,000	35,000,000		70,000	14,844,585	29,689
West Hackberry	9	200	160	40	51	4,200	3,834	75	3,845,000	4,405,050	22,025	4,000,000	12,000,000	[7-3] 8,000,000	12,000,000		60,000	7,594,950	37,974
Sweet Lake	11	100	70	30	5	1,050	1,017	203	3,584,000	3,720,215	37,202	6,500,000	6,500,000		6,500,000		65,000	2,779,785	27,798
Cameron Parish, total 7 fields	....	1,600	1,170	430	161	19,450	19,159	119	35,928,000	39,387,143	24,617	61,500,000	79,500,000	18,000,000	81,500,000	2,000,000	50,938	42,112,857	26,321
East Baton Rouge, University, S. Baton Rouge	½	100	20	80	1		285	285		34,461	345				1,000,000	[3]1,000,000	10,000	965,539	9,655
Pine Prairie	25	25	25						20,000	20,000	800	20,000	20,000	[10]	20,000		800		
Villa Platte	¾	500	150	350	10	2,000	3,561	356	50,000	303,492	607		5,000,000	[2]5,000,000	15,000,000	[7]10,000,000	30,000	14,696,508	29,393
Evangeline Parish, total 2 fields	....	525	175	350	10	2,000	3,561	356	70,000	323,492	616	20,000	5,020,000	5,000,000	15,020,000	10,000,000	28,610	14,696,508	27,993
Fausse Point	3	20	20		1		21	21	6,000	6,252	313	6,000	6,000		50,000	[3]44,000	2,500	43,748	2,187
Jefferson Island	½ mo.	100	20	80	1		247	247		2,964	30				500,000	[2]500,000	5,000	497,036	4,970
New Iberia	10	200	175	25	38	15,000	15,050	396	9,333,000	11,847,018	59,235	15,000,000	20,000,000	[3]5,000,000	20,000,000		100,000	8,152,982	40,764
Iberia Parish, total 3 fields	....	320	215	105	40	15,000	15,318	383	9,339,000	11,856,234	37,050	15,006,000	20,006,000	5,000,000	20,550,000	544,000	64,218	8,693,766	27,168
Bayou Blue	8	25	25		1	Shut in	Shut in		74,000	74,975	2,999	70,000	100,000	[3]30,000	100,000		4,000	25,025	1,001
Choctaw	6	90	50	40	10	1,550	1,819	182	1,725,000	1,955,380	21,276	5,000,000	5,000,000		5,000,000		55,555	3,044,620	33,829
White Castle	11	175	150	25	7	1,550	1,652	236	2,265,000	2,536,068	14,492	6,000,000	6,000,000		6,000,000		34,286	3,463,932	19,794
Iberville Parish, total 3 fields	....	290	225	65	18	3,100	3,471	193	4,064,000	4,566,423	15,746	11,070,000	11,100,000	30,000	11,100,000		38,275	6,533,577	22,530
Jefferson Parish, Lafitte	3	2,500	1,500	1,000	23	15,105	16,156	702	6,989,000	9,829,516	3,932	75,000,000	100,000,000	[3 7]25,000,000	100,000,000		40,000	90,170,484	36,068
Roanoke	3	850	800	50	25	3,000	3,614	145	5,995,000	6,726,493	7,914	10,000,000	13,000,000	[7]3,000,000	13,000,000		15,294	6,273,507	7,381
South Elton	1	100	40	60	1		1	1	5,000	10,896	109		1,000,000	[2]1,000,000	1,000,000		10,000	989,104	9,891
South Jennings	2	100	40	60	1	Shut in	Shut in		5,000	5,822	58	1,000,000	1,000,000		1,000,000		10,000	994,178	9,942
South Roanoke	1	100	20	80	1		76	76	5,000	24,028	240		1,000,000	[2]1,000,000	1,000,000		10,000	975,972	9,760
Welsh	34	50	50		12		25	2	610,000	614,610	12,292	750,000	750,000		750,000		15,000	135,390	2,708
Woodlawn	5/12	100	20	80	2		616	308		20,006	200				1,000,000	[2]1,000,000	10,000	979,994	9,800
Jefferson Davis Parish, total 6 fields	....	1,300	970	330	42	3,000	4,332	103	6,620,000	7,401,855	5,694	11,750,000	16,750,000	5,000,000	17,750,000	1,000,000	13,654	10,348,145	7,960
Lake Long	1	400	60	340	3	750	728	243	83,000	195,167	488		5,000,000	[2]5,000,000	8,000,000	[3 7]3,000,000	20,000	7,804,833	19,512
Leeville	9	325	325		91	5,000	4,988	55	17,619,000	18,604,874	57,245	25,000,000	25,000,000		25,000,000		79,923	6,395,126	19,677
Raceland	½	100	20	80	1	700	697	697		93,984	940				5,000,000	[2]5,000,000	50,000	4,906,016	49,060
Timbalier Bay	½	100	20	80	1		56	56		34,064	341				1,000,000	[2]1,000,000	10,000	965,936	9,659
Valentine	1	250	200	50	16	4,500	4,663	291	975,000	1,871,764	7,487	5,000,000	15,000,000	[3]10,000,000	15,000,000		40,000	13,128,236	52,512
La Fourche Parish, total 5 fields	....	1,175	625	550	112	10,950	11,132	99	18,677,000	20,799,853	17,702	30,000,000	45,000,000	15,000,000	54,000,000	9,000,000	45,957	33,200,147	28,255

(*) Gas and distillate.
[1] Flank development. [2] New field. [3] New sand. [4] Development of new sand. [5] Field depleted. [6] Commercial oil. [7] Extensions. [8] Salt water encroachment. [9] First commercial well. [10] Field abandoned.

(Table continued next page)

Louisiana Gulf Coast Production and Reserve Data Summary by Fields and Parishes—(Cont'd)

PARISH AND FIELD	Age in Years	AMOUNT OF ACREAGE			No. of Wells	Daily Field Allowable	DAILY PRODUCTION		BARRELS CUMULATIVE PRODUCTION			ESTIMATED BARRELS OF ULTIMATE PRODUCTION					ESTIMATED RESERVE	
												January 1, 1938		July 1, 1938				
		Acres Proved	Acres Developed	Acres Undeveloped			Total Field	Per Well	Yield to Jan. 1, 1938	Yield to July 1, 1938 Field	Yield to July 1, 1938 Acre	January 1, 1937	Total	Change	Total	Change	Acre	Total Field	Per Acre
Garden Island Bay	9	300	250	50	9	2,500	2,466	274	1,020,000	1,468,006	4,803	3,000,000	3,000,000		3,000,000		10,000	1,531,994	5,107
Lake Hermitage	3	75	75		2	Shut in	Shut in		110,000	114,598	1,528	1,000,000	1,000,000		1,000,000		13,333	885,402	11,805
Lake Washington	6	150	150		7	1,000	881	126	2,087,000	2,276,204	15,175	5,000,000	5,000,000		5,000,000		33,333	2,723,796	18,159
Potash	9	100	20	80	1					433	4		200,000		200,000		2,000	199,567	1,996
Quarantine Bay	½	500	40	460	1	625	522	522		107,330	215		12,000,000	[2]200,000	12,000,000		24,000	11,892,670	23,785
Venice	1	150	30	120	3	1,000	1,468	489	175,000	358,291	2,389		7,000,000	[2]7,000,000	7,000,000		46,667	6,641,709	44,278
Plaquemine Parish, total 6 fields		1,275	565	710	23	5,125	5,297	230	3,392,000	4,324,862	3,392	9,000,000	28,200,000	19,200,000	28,200,000		22,118	23,875,138	18,725
St. Charles Parish, Bayou des Allemands	1	100	20	80	1	100	109	109	45,000	61,905	619		2,000,000	[2]2,000,000	2,000,000		20,000	1,938,095	19,381
St. Landry Parish, Port Barre	11	275	275		27	2,000	2,100	78	6,798,000	7,083,139	25,757	9,500,000	9,500,000		9,500,000		33,545	2,416,861	8,789
Anse la Butte	36	50	50		7	300	159	23	898,000	942,735	18,855	1,000,000	1,000,000		1,000,000		20,000	57,265	1,145
Bayou Boullion	36	35	35						489,000	489,000	13,971	750,000	750,000		750,000			261,000	7,457
St. Martinsville	3	100	70	30	2	650	675	338	555,000	680,130	6,801	2,000,000	2,000,000		2,000,000		20,000	1,319,870	13,199
St. Martin Parish, total 3 fields		185	155	30	9	950	834	93	1,942,000	2,111,865	11,415	3,750,000	3,750,000		3,750,000		20,270	1,638,135	8,855
Bateman Lake	7/12	100	20	80	1	400	390	390		74,198	742		2,000,000	[2]2,000,000	2,000,000		20,000	1,925,802	19,258
Charenton	2	250	150	100	20	3,500	3,468	173	260,000	664,033	2,656	1,000,000	4,000,000	[3-7]3,000,000	10,000,000	[3-7]6,000,000	40,000	9,335,967	37,344
Horseshoe Bayou	1	400	40	360	1	800	819	819	76,000	139,288	398		8,000,000	[2]8,000,000	8,000,000		20,000	7,840,732	19,602
Jeanerette	3	250	220	30	22	7,000	6,913	314	3,279,000	4,565,398	18,262	10,000,000	12,500,000	[3-7]2,500,000	12,500,000		50,000	7,934,602	31,738
St. Mary Parish, total 4 fields		1,000	430	570	44	11,700	11,590	263	3,615,000	5,462,897	5,463	11,000,000	26,500,000	15,500,000	32,500,000	6,000,000	32,500	27,037,103	27,037
Bay St. Elaine	8	100	20	80	1		222	222	53,000	73,142	731		1,000,000	[2]1,000,000	1,000,000		10,000	926,858	9,269
Caillou Island	7	600	400	200	37	16,500	16,949	458	16,098,000	19,334,005	32,223	25,000,000	45,000,000	[3-7]20,000,000	45,000,000		75,000	25,665,995	42,776
Dog Lake	8	100	50	50	3	1,800	1,680	560	993,000	1,342,550	13,425	5,000,000	5,000,000		5,000,000		50,000	3,657,450	36,575
Four Isle	9	100	40	60	1		4	4	292,000	292,697	2,927	3,000,000	3,000,000		3,000,000		30,000	2,707,303	27,073
Gibson	1	900	200	700	9	2,000	2,049	228	425,000	895,134	998		18,000,000	[2]18,000,000	18,000,000		20,000	17,101,866	19,002
Lake Barre	8	425	340	85	24	2,000	1,627	68	16,232,000	16,620,697	39,107	20,000,000	20,000,000		20,000,000		47,058	3,379,303	7,951
Lake Pelto	8	100	50	50	5	1,250	1,278	256	748,000	965,164	9,652	1,000,000	5,000,000	[3-7]4,000,000	5,000,000		50,000	4,034,836	40,348
Lirette	1	150	20	130	1		21	21	30,000	35,022	233		1,000,000	[2]1,000,000	1,000,000		6,667	964,978	6,433
West Dulac	3 days	100	20	80	1		125	125		500	5				1,000,000	[2]1,000,000	10,000	999,500	9,995
Terrebonne Parish, total 9 fields		2,575	1,140	1,435	82	23,550	23,955	292	34,871,000	39,561,911	15,364	54,000,000	98,000,000	44,000,000	99,000,000	1,000,000	38,440	59,438,089	23,082
Abbeville	1	500	60	440	3	700	512	171	25,000	123,139	246	1,000,000	5,000,000	[3-7]4,000,000	5,000,000		10,000	4,876,861	9,754
Gueydan	5	75	50	25	5	400	436	87	731,000	810,330	10,804	1,500,000	1,500,000		1,500,000		20,000	689,670	9,196
Vermilion Parish, total 2 fields		575	110	465	8	1,100	948	119	756,000	933,469	1,623	2,500,000	6,500,000	[3-7]4,000,000	6,500,000		13,304	5,566,531	9,681
TOTAL 72 FIELDS		21,975	12,850	9,125	1,031	176,380	184,243	1,788	331,310,000	363,237,540	16,529	593,096,000	768,326,000	175,730,000	820,470,000	51,644,000	37,336	457,232,460	20,807

[1] Flank development. [2] New field. [3] New sand. [4] Development of new sand. [5] Field depleted. [6] Commercial oil. [7] Extensions. [8] Salt water encroachment. [9] First commercial Well. [10] Field abandoned.

wells completed in the area the first six months of 1938 than there were in the same period of 1937. There were 272 completions in the district as compared to 228 the first six months of 1937, of which 155 were oil wells, 8 gas and 109 dry holes.

Many Large Fields

Although only two Gulf Coast fields already have produced over 100,000,000 barrels, nearly a dozen are expected to ultimately yield that much or more. Four fields are regarded as ultimate sources of a quarter of a billion barrels or more each, and one of these is expected to produce over a half billion barrels. Obviously, these fields are among the best ever developed in the United States.

The largest coastal field is Conroe, in Montgomery County, discovered late in 1931. It is expected to ultimately yield 670,000,000 barrels.

The second largest coastal field is Hastings, Brazoria County, Texas, which was not discovered until December, 1934. Ultimately it is expected to yield 400,000,000 barrels.

Fields expected to yield more than 100,000,000 barrels are listed below:

Field	Expected Ultimate
Conroe	670,000,000
Hastings	400,000,000
Anahuac	300,000,000
Friendswood	250,000,000
Thompsons	210,000,000
Spindletop	140,000,000
Humble	130,500,000
Hull	100,000,000
West Columbia	100,000,000
Old Ocean	100,000,000
Lafitte	100,000,000

It will be noted that all the fields in which an ultimate yield of over 100 million barrels is expected are in Texas, with the exception of Lafitte.

Conroe Also Largest Reserve

The Conroe field also has the largest volume remaining to be produced. It being estimated that this field has 577,280,468 barrels remaining in its sand.

There are only six other

SCHLUMBERGER *Helps Crown*

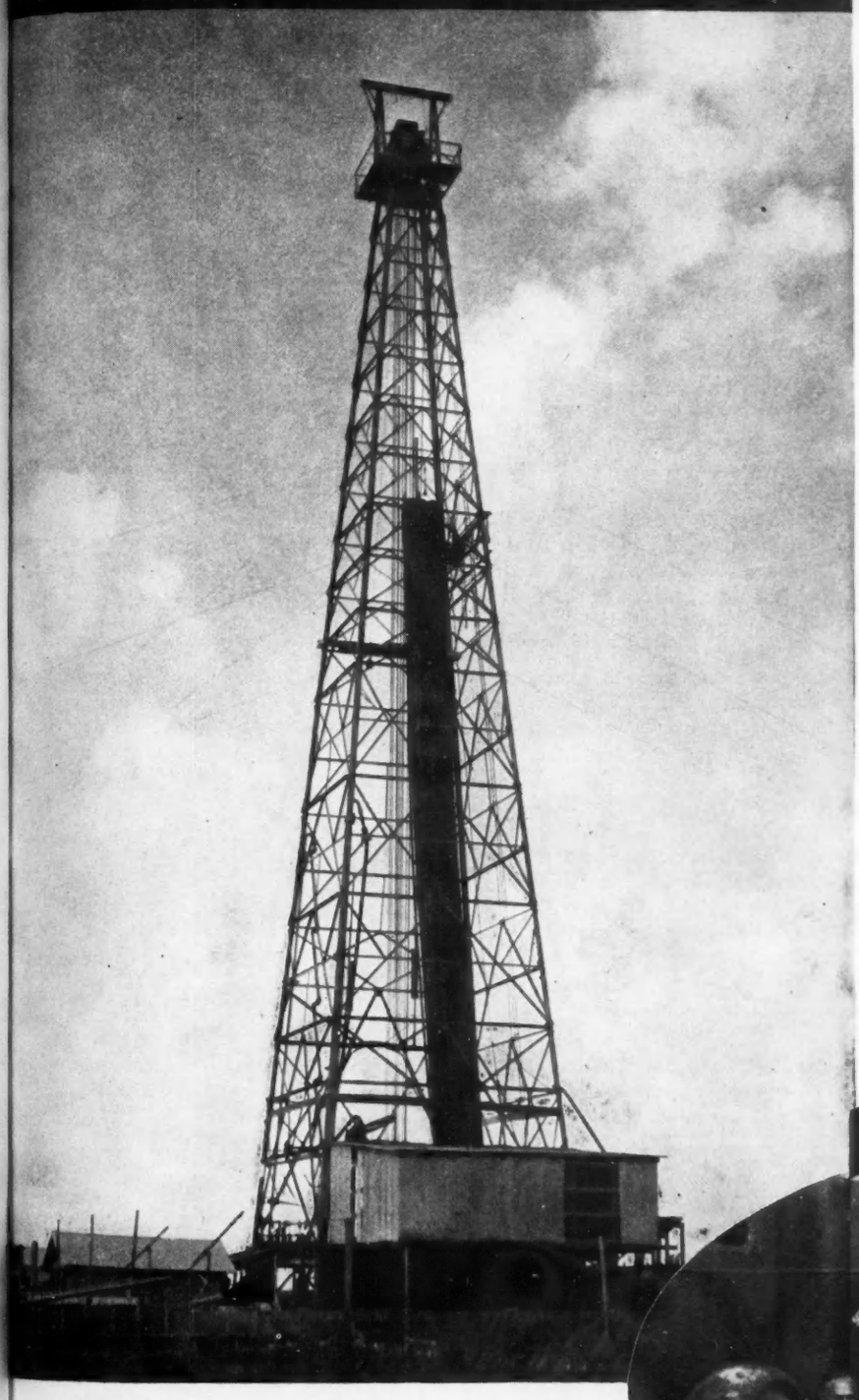
A NEW WORLD'S CHAMPION

FOHS OIL COMPANY No. 1 BUCKLEY-BOURG, TERREBONNE PARISH, LOUISIANA

With uncanny regularity, World records for deep oil wells are being broken, and with the same regularity, Schlumberger Electrical Well Logging is playing a major part in the discovery of new deep fields.

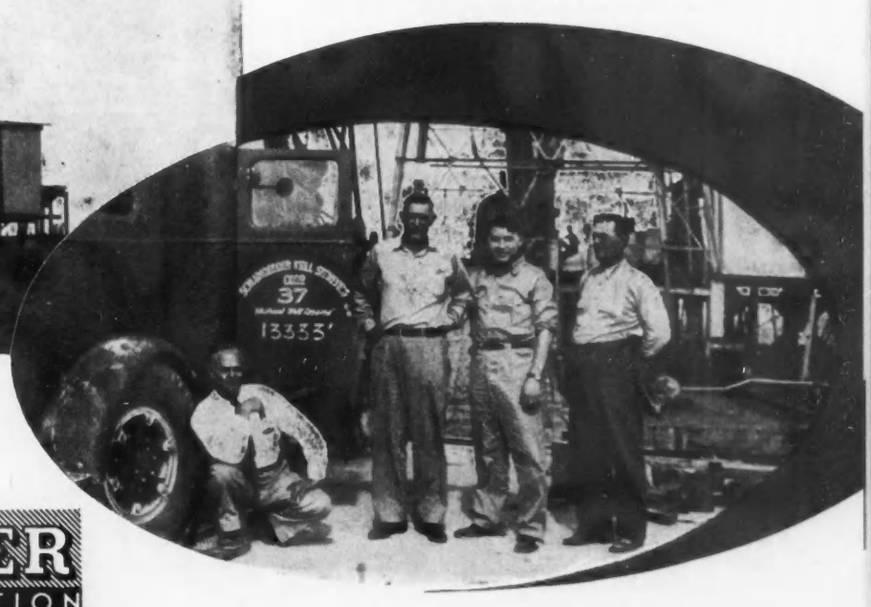
Because core recovery is generally inadequate from such depths as No. 1 Buckley-Bourg is producing, 13,254' to 13,266', or from the 13,100' producing horizon in the former record holder, Continental Oil Company's KCL A-2 near Wasco, California, Schlumberger surveys are, obviously, of even greater value in deep exploratory drilling.

During the past ten years, Schlumberger has given the oil industry the following in rapid succession: Resistivity diagram; porosity and resistivity diagram; an additional resistivity diagram (Third Curve) allowing lateral analysis of the formations away from the walls of the hole; side wall sampler, recovering samples from the wall of the hole at any depth desired, and photographic recording. **No electrical well logging service is up-to-date unless these important features are covered.**



Fohs Oil Company No. 1 Buckley-Bourg, Terrebonne Parish, Louisiana, completed June 18 as the World's deepest producer and second deepest hole ever drilled.

Below: Close-up view of Schlumberger truck at Buckley-Bourg No. 1. Men in the picture are, left to right: W. A. Reiter and Rubin Dobbs of Fohs Oil Co.; H. Rappart of Schlumberger, and Mr. Bourg, landowner.



SCHLUMBERGER
WELL SURVEYING CORPORATION
HOUSTON, TEXAS—U. S. A.
"Electrical Well Logging"

Texas Gulf Coast Drilling Work Gains

DATE	New Locations	Locations	Derricks	Rigging Up	Drilling Wells	Shut Down	Total
January 3	21	48	18	7	117	1	212
10	31	49	20	4	112	1	217
17	37	47	14	7	145	5	255
24	31	48	25	11	106	1	222
31	27	52	25	9	115	3	231
February 7	30	45	30	6	127	5	243
14	30	45	30	6	127	5	243
21	23	46	29	11	128	6	243
28	32	49	19	11	134	8	253
March 7	18	50	26	5	133	6	238
14	39	49	21	5	133	6	253
21	32	47	22	11	137	7	256
28	25	49	23	7	129	3	236
April 4	32	47	19	7	134	3	242
11	36	50	18	8	135	3	250
18	33	50	20	8	143	3	257
25	29	48	23	8	145	3	256
May 2	24	42	26	7	147	3	249
9	42	39	23	10	150	4	268
16	20	43	24	8	157	3	255
23	44	45	17	3	155	2	266
30	37	48	21	9	159	2	276
June 6	30	57	29	3	151	5	275
13	29	56	23	8	141	4	261
20	31	53	25	6	137	4	256
27	21	56	21	8	136	4	246
July 4	37	47	14	7	145	5	255

Results of Wildcat Drilling in the Louisiana Gulf Coast

During the First Six Months of 1938

PARISH	Wildcats Drilled	Still Active	Discoveries
Acadia	3	..	1
Avoyelles	1	..	..
Beauregard	1	1	1
Calcasieu	4	1	..
Cameron	4	2	1
East Baton Rouge	2	1	1
Iberia	1	..	1
Jeff Davis	3	2	1
Lafayette	1	..	..
Lafourche	2	2	2
Orleans	1	1	..
St. Bernard	1	1	..
St. James	..	2	..
St. Landry	2	..	..
St. John	..	1	..
St. Martin	3	3	..
St. Mary	1	..	..
St. Tammany	2	1	..
Terrebonne	1	5	1
Vermilion	1	..	..
Vernon	..	1	..
Total	34	24	9

fields expected to produce more than 75 million in the future, but no other district in the world can claim this number.

Hastings ranks second to Conroe with an estimate of 387,499,580 barrels to be produced in the future.

Other fields estimated to have over 75 million barrels remaining in reserve are: Anahuac, 291,289,035 barrels; Friendswood, 249,580,353 barrels; Thompsons, 182,308,677 barrels; Old Ocean, 98,642,837 barrels; and Lafitte, 90,170,484 barrels.

Per Acre Yield High

A number of the Gulf Coast fields already have produced more than 100,000 barrels per acre. The largest quantity per acre to date is from famous old Spindletop, which has produced 292,492 barrels. This field is expected to ultimately yield 329,411 barrels, which far exceeds estimates on any other field.

The Vinton (Louisiana) field has produced 158,610 barrels per acre, and is expected to yield another 26,575 barrels per acre. Thus, Vinton ranks second to Spindletop in both the volume produced per acre to date and in the per acre estimated total.

Barbers Hill has produced 139,476 barrels per acre, and is given an ultimate estimate of 177,777 barrels. West Columbia follows with a yield of 135,137 barrels per acre, and is expected to produce 166,666 barrels per acre before depletion. Hull has produced 114,579 barrels of an estimated per acre yield of 133,333 barrels, while Pierce Junction has recovered 101,032 barrels and is expected to give up another 23,967 barrels an acre.

Besides those fields that already have produced 100,000 barrels per acre, there are a number that are expected to reach that figure. Among these are Sour Lake, Jennings, Sulphur and New Iberia.

Several Big Counties

There are 10 counties or parishes in the coast area that are expected to yield more than 100,000,000 barrels on the basis of present fields. In fact some of the areas already have exceeded this figure in cumulated production.

Although it has but one field, Montgomery County, Texas, tops the list. It is expected to recover 670,000,000 barrels ultimately from the Conroe field, of which 577,000,000 barrels remain to be produced.

Harris County, which ranks

Results of Wildcat Drilling in the Texas Gulf Coast

During the First Six Months of 1938

COUNTY	Wildcats Drilled	Still Active	Discoveries
Brazoria	4	1	..
Brazos	1	..	..
Chambers	3	..	1
Fort Bend	3	3	..
Galveston	2	1	..
Grimes	1	..	..
Harris	10	2	3
Jasper	..	1	..
Jefferson	6	..	2*
Madison	1	..	..
Matagorda	5	..	1
Montgomery	1	1	..
Liberty	..	2	..
Orange	1	..	..
San Jacinto	1	..	..
Trinity	1	..	..
Tyler	2	..	..
Walker	1	..	..
Waller	2	..	..
Wharton	3	..	..
Total	48	11	7

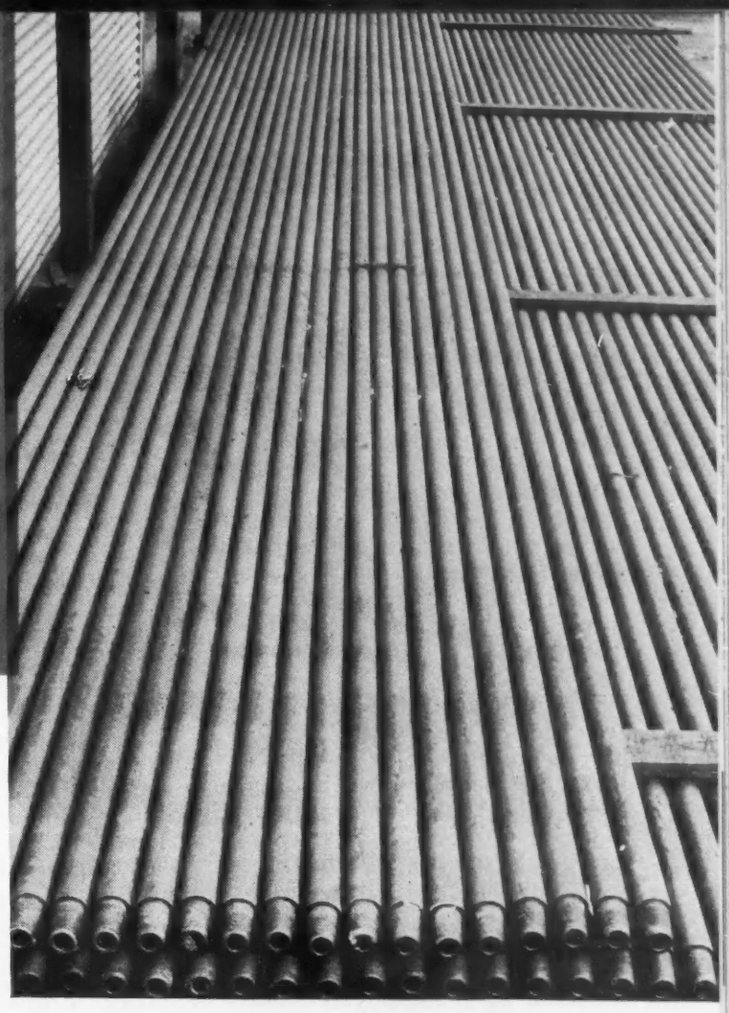
* One a salt dome.

South Louisiana Drilling Activity Steady

DATE	New Locations	Locations	Derricks	Rigging Up	Drilling Wells	Shut Down	Total
January 3	10	20	7	6	106	14	163
10	14	17	8	6	110	13	168
17	17	19	11	10	92	14	163
24	15	20	7	11	86	11	150
31	11	22	12	8	90	9	152
February 7	11	22	12	8	90	9	152
14	13	21	12	7	97	8	158
21	24	24	8	9	95	7	167
28	11	24	9	7	108	9	168
March 7	5	20	9	11	112	7	164
14	12	20	7	8	104	7	158
21	10	20	6	6	109	7	158
28	12	16	8	8	104	8	156
April 4	23	15	11	8	100	7	164
11	18	18	10	6	102	9	163
18	9	16	9	13	111	11	169
25	7	17	11	8	115	10	168
May 2	17	15	11	7	110	10	170
9	26	18	9	11	104	4	172
16	6	25	11	6	113	2	163
23	21	27	8	7	114	2	179
30	14	27	11	2	125	4	183
June 6	7	24	12	3	117	5	168
13	17	22	10	6	110	3	168
20	11	23	9	10	112	4	169
27	21	20	7	8	111	7	174
July 4	11	19	10	5	107	7	159

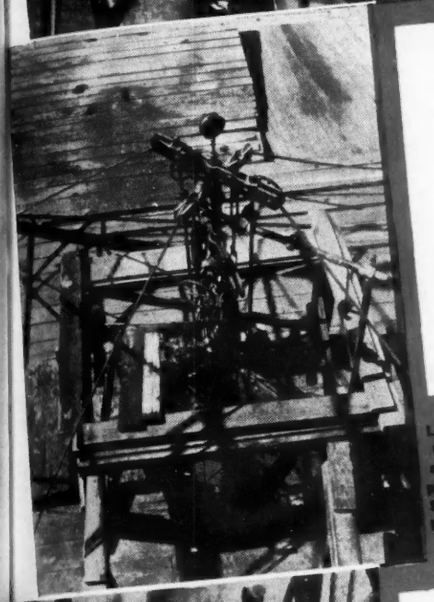
SAVED:
1 Oil Well at Labelle, Texas

HOMCO'S INSIDE DRILL PIPE CUTTING SERVICE IS PREPARED FOR TODAY'S HAZARDOUS PRESSURES

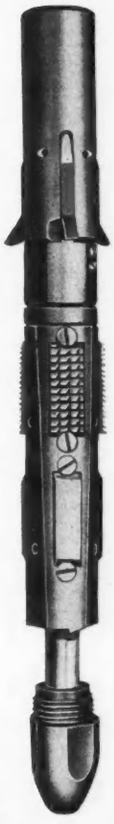


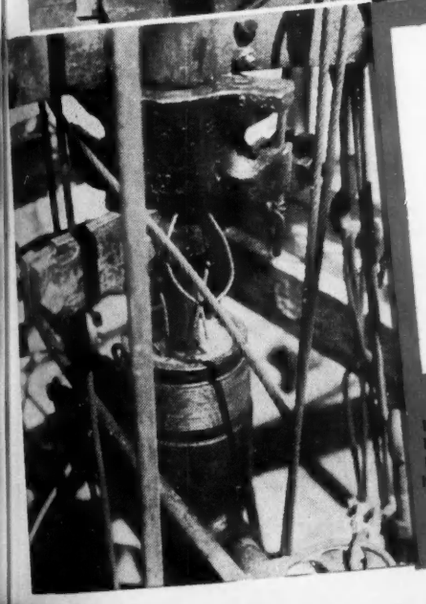
Part of the 15,000' of 2½" O.D. Grade "D" 6.85 lb. special HOMCO left-hand thread drill pipe (with special Hughes flush joint tool joint on each joint), which is carried in stock. 40,000' of right- and left-hand thread 1¼" O.D. Grade "D" with special 2-3/16" Hughes tool joints also carried in stock.

LEFT: Close-up view of casing head-preventer hook-up as clamped down to combat 5500 lbs. shut-in pressure.



LEFT: View of Christmas-tree after final completion. RIGHT: Special HOMCO Inside Drill Pipe Cutter.





LEFT: Note HOMCO "little inch" drill pipe between control head and upside down spider arrangement.

They drilled into gas at 8622' and started out of hole. Well blew and stuck 4½" drill pipe, and they called for HOMCO'S special Inside Drill Pipe Cutter which runs through full hole tool joints on HOMCO special "little inch" drill pipe. Cut was made at 8098' and well blew in through regular and special drill pipe strings, wrecking swivel and blowing out wash pipe. They turned casing spider upside down and held HOMCO drill pipe with spider slips . . . then clamped spider down. The well then produced 1100 barrels of distillate and 83,000,000 cubic feet of gas . . . shut-in pressure 5500 lbs.; flowing pressure 875 lbs. Regular drill pipe flow was through two 3" flow ports of Hinderliter No. 1 Type "HZ" patented 3-in-1 casing head hookup, 6000 lbs. test, with 2⅜" O.D. tubing preventer and wedges. Flow through HOMCO drill pipe, choked down to ⅞" tool joint openings and ⅝" water course in special HOMCO Cutting Tool, was through special 2" bleed line above regular hook-up.

A COMPLETE STOCK OF OIL WELL SUPPLIES—MOST COMPLETE CUTTING AND FISHING TOOL SERVICE IN THE WORLD —A PROVEN LINE OF PICKED SPECIALTIES—MUD STOCKS AT CONVENIENT POINTS

HOUSTON OIL FIELD MATERIAL CO., INC. HOUSTON TEXAS

HOMCO

CUTTING AND FISHING TOOL SERVICE

HOUSTON, TEXAS

BRANCH STORES: Beaumont, Kilgore, Wichita Falls, Victoria, Freer, Corpus Christi, Hebbronville, Benavides, Odessa, Sam Fordyce, Texas; Shreveport, Lake Charles, New Iberia, Houma, Louisiana; Oklahoma City, Okla. SALES OFFICE: Dallas, Texas.

third in estimated ultimate recovery, leads in the number of fields and volume of production already produced. This county has 14 fields from which 616,000,000 barrels are expected to be produced ultimately. A total of 249,000,000 barrels have been produced so far, and 367,000,000 barrels are expected to be produced in the future.

Brazoria is another high ranking county. Its 12 fields have produced 117,000,000 barrels and are expected to add another 565,000,000 barrels to reach an ultimate output of 682,000,000 barrels, which ranks it second to Montgomery County in future producing volume already discovered and in total ultimate yield.

Eight fields in Chambers County are expected to produce 453,000,000 barrels ultimately, of which only 73,000,000 barrels have been produced. This ranks this county third in future estimated reserves with a figure of 380,000,000 barrels.

Details of this nature for all counties and parishes in the Texas-Louisiana Gulf Coast are presented in accompanying tables.

Texas Sector Leads

The Gulf Coast region of the United States is comprised of two parts, namely the Louisiana portion and the Texas sector. The Texas part is the western half of the region. It is bordered on the south by the Gulf of Mexico and extends inland about 150 miles from the coast. It extends east and west from the Texas-Louisiana state line to Jackson County. The Louisiana coastal area is the southern half of the state.

The Texas Gulf Coast has played a more prominent part in the region's past history. It is estimated that the 94 coastal fields in Texas will have an ultimate recovery of 3,583,024,000 barrels, of which 2,467,517,630 barrels remain to be produced in the future. Estimates of ultimate production have increased 142,800,000 barrels since the first of 1938. During the year 1937, ultimate recovery calculations rose 377,246,000 barrels.

Texas has produced 1,115,506,370 barrels of oil, or an average of 10,802 barrels per acre. The 103,265 proven acres in the region are comprised of 28,840 that remain undrilled. There are 6096 Texas wells, which produce an average of 31 barrels each under strict proration regulations, or a total of 187,422 barrels daily.

The Louisiana Gulf Coast area is calculated to have an ultimate recovery from present known fields of 820,470,000 barrels, which represents an increase of 51,664,000 barrels since the first of 1938. The territory has produced 363,237,540 barrels of this amount, leaving a remaining future producible crude reserve of 457,232,460 barrels.

The Louisiana coastal belt has 21,975 proven acres, of which 9125 acres remain to be drilled. To date it has produced 16,529 barrels per acre, and is ultimately expected to yield 37,336 barrels an acre.

South Louisiana to Gain

Whereas the Texas sector of the Gulf Coast ranks as the leading re-

New Oil Fields in South Louisiana the First Six Months of 1938

Field	Parish	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Raceland	Lafourche	Amerada Petroleum Corp.'s South Coast Corp. 1, 34-15s-19e	Miocene	10183–208	733	34.9
Timbalier Bay	Lafourche	Gulf Oil Corp.'s State PP 3, 36-23s-21e	Miocene	6955–63	336	32.8
Creole	Cameron	Superior Oil Co.'s State 1, in Gulf of Mexico, 4-15s-8w	Miocene	5110–30	240	33.9
Woodlawn	Jefferson Davis	Union Sulphur Co.'s Calcasieu National Bank 1, 12-9s-8w	Oligocene	8286–88	43	51
South Baton Rouge	East Baton Rouge	Louisiana Crusader Oil Co.'s Duplantier, 65-7s-1w	Miocene	6472–77	520	33.2
Bancroft	Beauregard	Republic Prod. Co.'s Lutcher Moore 1, 10-6s-13w	Oligocene	7575–80	Gas	Gas
South Crowley	Acadia	Humble Oil & Refining Co.'s Boyd and Finch 1, 22-10s-1e	Miocene	7308–15	35	35.2
West Dulac	Terrebonne	Fohs Oil Co.'s Buckley Bourg 1, 17-19s-17e	Miocene	13254–266	125	47
Jefferson Island	Iberia	The Texas Co.'s Bayless & Jones 1, 58-12s-5e	Miocene	8170–8210	500	37.5
West Gueydan	Vermilion	Magnolia Petroleum Co.'s Ferguson 1, 5-17s-2w	Miocene	7140–50	75	62

New Oil Fields in South Louisiana the First Six Months of 1937

Field	Parish	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Cankton	St. Landry	Superior Oil Producing Co.'s Savoie 2, 26-8s-3e	Miocene	5320–23	28	28
Abbeville	Vermilion	Continental Oil Co.'s Herbert 1, 20-12s-3e	Miocene	7666–75	25	Distillate
Gibson	Terrebonne	Shell Petroleum Corp.'s Realty Operators 1-B, 18-17s-15e	Miocene	9493	781	38
Lirette	Terrebonne	Humble Oil & Refining Co.'s Ellender 1, 23-19s-19e	Miocene	10525	480	37
Lake Long	Lafourche	Fohs Oil Co.'s State 1, 65-17s-19e	Miocene	9406	890	38

New Oil Fields in South Louisiana the Last Six Months of 1937

Field	Parish	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Venice	Plaquemines	Tide Water Associated Oil Co.'s Manhattan Fruit 3, 26-21s-30e	Miocene	7208	216	38
Horseshoe Bayou	St. Mary	The Texas Co.'s Horseshoe Bayou 1, 40-17s-9e	Miocene	10873	1152	39
Bayou des Allemands	St. Charles	Amerada-Louisiana Land & Exploration Co.'s State 1, 13-15s-20e	Miocene	6830	569	36
Bay St. Elaine	Terrebonne	The Texas Co.'s State 14, 20-22s-18e	Miocene	5643	1004	29
South Elton	Jeff Davis	Stanolind-Amerada's Calcasieu Natl. Bank 2-B, 28-7s-3w	Oligocene	8965	128	52
Ville Platte	Evangeline	Continental Oil Co.'s Tate 1, 44-3s-2e	Sparta	9035	177	52
North Crowley	Acadia	Humble Oil & Refining Co.'s Federal Land Bank 1, 34-8s-1e	Oligocene	8102	672	36
Potash	Plaquemines	Humble Oil & Refining Co.'s Orleans Levee Board 11, 10-18s-15e	Miocene	696	25	16
Quarantine Bay	Plaquemines	Gulf Oil Corp.'s Quarantine Bay QQ3, 17-19s-17e	Miocene	8177	845	32
Bateman Lake	St. Mary	The Texas Co.'s State 1, 21-16s-12e	Miocene	10905	350	....

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serve area of the United States, southern Louisiana at present is far down the list. However, it is generally anticipated that Louisiana's coastal area will take a major position in the future. It is considered one of the most promising territories for oil development in the nation, being particularly enhanced by its possibilities for deep production.

During the first part of 1938, wildcat activity in the Louisiana sector has outranked the Texas Gulf Coast. Twice as many wildcats have been drilled in this period in Louisiana as in the Texas belt.

One of the major reasons, besides its chances of yielding production, why the Lousiana Gulf Coast is being prospected so actively is the granting of allowables that are more liberal than those in Texas. Whereas Texas discovery wells usually are given an allowance of 100 to 150 barrels, and thereafter the allowable is cut for each new well completed, some wells in Louisiana are permitted to produce up to 1000 barrels daily. There are approximately 150 wells in the coast of Louisiana that are producing more than 300 barrels daily, and a considerable portion of this number yield 500 barrels per day. Naturally this is a situation that encourages development of properties, as it is possible to get a quicker return of investments.

Exploration work in South Louisiana is definitely increasing. On July 1, 1938, there were 61 crews working in the region. Practically every structure mapped in the region in the past few years has been a direct result of geophysical activity. That the region as yet has not been depleted of its prospects is shown by the addition of 79 new prospects in the last 2½ years.

Old Ocean Important

Special mention is made of the Old Ocean field, Brazoria County, because it is the deepest producing field in Texas. The field was discovered by Harrison & Abercrombie in 1934. Since the discovery well came in below 8500 feet five sands have been found in the field. Some of the sands are 350 feet or more thick. Early estimates on the field place the ultimate recovery at 100,000,000 barrels, but this is thought to be very conservative. Estimates have been made up to 500,000,000 barrels. Oil at Old Ocean is found dissolved in gas and when gas is produced the oil is cracked out. Also there is some dark oil being produced at Old Ocean and according to reports it tests around 37 gravity.

Old Ocean has not been defined yet. The field is producing at depths from 8600 to 10,660 feet. Frio formation is the productive horizon at Old Ocean and it is very thick in this area and very broken. To date there have been 4000 acres proved, but only 1500 developed;

New Sand Discoveries in South Louisiana the First Six Months of 1938

Field	Parish	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Charenton	St. Mary	Pan American's Ecure 1-A, 11-13s-9e	Miocene	2620–40	350	22.6
Garden Island	Plaquemines	The Texas Co.'s State 25, 38-23s-33e	Miocene	5782–5810	1492	37.2
Leeville	Lafourche	The Texas Co.'s L. L. E. Leeville 63, 27-21s-22e	Miocene	5633–83	932	36.8
Lafitte	Jefferson	The Texas Co.'s L. L. E. Lafitte 4	Miocene	8035–90	1495	33.3
Jennings	Acadia	Superior Oil Co.'s J. Clements 1, 46-9s-2w	Oligocene	6954–77	431	39.6
Sorrento	Ascension	Pan American's United Lands 9, 15-10s-4e	Miocene	898–926	384	23.5
Big Lake	Cameron	Union Sulphur's Hebert 2, 18-12s-8w	Miocene	6779–83	225	40.7
Jennings	Acadia	Superior Oil Co.'s Clement 2	Oligocene	6791–6827	547	40
Valentine	Lafourche	Pan American's Harange 16	Miocene	5176–90	Gas and distillate	50.1
Woodlawn	Jeff Davis	Union Sulphur's Calcasieu National Bank 2, 12-9s-6w	Oligocene	8894–98	300	36.7
Charenton	St. Mary	Pan American's Veeder-South 5, 11-13s-9e	Miocene	1124–38	103	20.4
Hackberry	Cameron	Superior Oil Co.'s Benson-Vincent 1, 30-12s-10w	Oligocene	6235–40	Gas	Gas
Valentine	Lafourche	Pan American's Abribat 1, 10-17s-20e	Miocene	3835–53	225	32.2
Lake Long	Lafourche	Fohs Oil Co.'s State 4, 77-17s-19e	Miocene	10416–419	60	51
Charenton	St. Mary	Fifteen Oil Co.'s Parro 1, 31-13s-10e	Miocene	6658–93	182	43
Choctaw	Iberville	Louisiana Crusader Oil Co.'s Schwing 2, 29-8s-11e	Oligocene	8250–59	660	37.4
Abbeville	Vermilion	Continental Oil Co.'s Motty 1, 66-12s-3e	Miocene	6424–28	185	38.7
Sorrento	Ascension	Pan American Prod. Co.'s United Lands 10, 15-10s-4e	Pliocene	876–901	175	24.1
Sweet Lake	Cameron	Pure Oil Co.'s Stanolind Fee 7, (wo) 12-13s-8w	Miocene	6362–67	313	26.2
Fausse Point	Iberia	The Texas Co.'s State 4, 35-11s-8e	Miocene	9000	Gas	....
Hackberry	Cameron	Superior Oil Co.'s Benson Vincent 2	Oligocene	6525	469	38

New Sand Discoveries in South Louisiana the First Six Months of 1937

Field	Parish	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Jennings	Acadia	Superior Oil Producing Co.'s Jennings Heywood 1, 41-9s-2w	Oligocene	6520	517	39
Lake Pelto	Terrebonne	The Texas Co.'s State 16, 17-23s-18e	Miocene	6088	800	37
Sulphur	Calcasieu	Union Sulphur Co.'s Fee 821 (wo), 9-9s-10w	Oligocene	5512	500	....
Gillis	Calcasieu	Union Sulphur Co.'s Barbe 12, 1-9s-8w	Oligocene	9101	Gas	....
Cankton	St. Landry	Superior Oil Producing Co.'s Savoy 2, 26-8s-3e	Miocene	5801	9	33
Lafitte	Jefferson	The Texas Co.'s Milling 1, 20-17s-24e	Oligocene	10022	643	41
Lafitte	Jefferson	The Texas Co.'s Rigoletts 5, 29-17s-24e	Oligocene	10110	1636	34
Dog Lake	Terrebonne	The Texas Co.'s State 4, 5-22s-16e	Miocene	6870	1516	40
Valentine	Lafourche	Pan-American Production Co.'s Harang 2-A, 8-17s-20e	Miocene	5390	624	32
Jennings	Acadia	Superior Oil Producing Co.'s Leckelt 2, 42-9s-2w	Miocene	5790	148	39
Big Lake	Cameron	Union Sulphur Co.'s J. O. Herbert 1, 18-12s-8w	Oligocene	9060	600	39
Darrow	Ascension	Humble Oil & Refining Co.'s Landry 1, 34-10s-2e	Oligocene	6995	744	39
Valentine	Lafourche	Pan-American Production Co.'s Harange 5, 8-17s-20e	Miocene	5886	641	33

New Sand Discoveries in South Louisiana the Last Six Months of 1937

Field	Parish	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Charenton	St. Mary	Pan-American Production Co.'s South Coast Corp. 1, 30-13s-10e	Miocene	4980	600	31
Valentine	Lafourche	Pan-American Production Co.'s Harang 7, 8-17s-20e	Miocene	5050	312	....
Charenton	St. Mary	Pan-American Production Co.'s Veeder-Hunt 1, 30-13s-10e	Miocene	3948	240	....
Jeanerette	St. Mary	Herton Oil Co.'s Banta Roanes 1, 40-13s-9e	Miocene	10292	180	36
Abbeville	Vermilion	Continental Oil Co.'s Brookshire 1, 66-12s-3e	Miocene	7890	480	41

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leaving another 2500 acres to be drilled. However, this is not believed to be the size of Old Ocean, because additional extensions are anticipated.

Lafitte Interesting Field

Although the Lafitte field does not rank at the top group of coastal fields, it is a very interesting and important field. It is the largest present future reserve in Louisiana. It was the first field in the world to produce from below 10,000 feet. Lafitte was discovered in May, 1935, by The Texas Company. The discovery producing level was 9500 feet, and subsequent drilling has led to the finding of five additional sands below the 9500-foot mark and one shallower zone.

The estimated ultimate recovery of the field is placed at 100,000,000 barrels, which is thought to be very conservative. The Miocene sands on this structure are very thick, and are believed capable of producing more than present estimates indicate. Today there are 23 wells producing 16,000 barrels daily. The field has 2500 proven acres, of which only 1500 has been developed. The estimated ultimate recovery per acre is 40,000 barrels.

Villa Platte field, Evangeline Parish, with only 15,000,000 barrels credited to it ultimately, is not a large producing area, but its discovery is one of utmost importance. The field is the first in the district to produce oil from the Sparta formation, and no doubt is the forerunner of deeper drilling along the so-called Conroe trend. The field has an average of 60 feet of sand, and covers 500 or more acres.

Dulac Is Deepest

The new Dulac field in Terrebonne Parish is another field at present credited with a small recovery that ranks high in importance. It is producing commercial oil from a depth of 13,266 feet, the deepest level in the world. It should be the forerunner of additional deep producing regions in the Louisiana belt. The producing formation is the Miocene.

Although Jennings was the first field discovered in the Louisiana Gulf Coast, it is the most active today. It presents a picture of the possibilities of deeper production around old producing salt domes in the region. Since its original discovery in 1901, shortly after Spindletop, the field has produced 59,000,000 barrels of oil. Production had declined to around 1600 barrels daily, when a new producing zone was discovered on the flanks of the dome. As a result a practically depleted field today is given a future producible reserve of 31,000,000 barrels. In 1936 there were only 43 producing wells; today Jennings has 120 wells and the latter figure is being expanded rapidly. Out of a total of 800 acres estimated to be in the proven producing area, 300 acres remain to be developed.

Marine Fields

While fields located in the bays and lakes of South Louisiana have been producing for several years, the first six months of 1938 saw the first pool discovered in the open waters of the Gulf of Mexico, and also the finding of the first production in big Galveston Bay of Texas.

The field in the Gulf of Mexico has been named Creole, and is located a mile offshore from Cameron Parish. It is credited with an ultimate yield of 2,000,000 barrels at this time. However, development is very meager to date. Only the discovery well is producing, the second test having missed to producing horizon.

Cedar Point, in Galveston Bay producing from the Frio formation,

New Oil Fields in Texas Gulf Coast First Six Months 1938

Field	County	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Cheek	Jefferson	Glenn H. McCarthy's Broussard Trust 1, C. Hillibrandt Sur.	Frio	7718–23	122	40
Fairbanks	Harris	Amerada-Stanolind's Mills 1, A. Larson Sur.	Cockfield	6838–53	675	38.8
Cedar Point	Chambers	Standard of Texas and Salt Dome Oil Corp.'s State 1, in Galveston Bay.	Frio	5958–67	650	36.2
McCrosky	Matagorda	Pierce Estate's Fee 1, I. & G. N., Sec. 7.	Frio	6620–24	200	33
Eureka	Harris	Jack Frazier's Vollmer-Neiman 1, R. Reinerman Sur.	Upper Saline Bayou	7697–7722	616	34
Clear Lake	Harris	West Production Co.'s Sowden 1, J. Lindsey Sur.	Frio	5790–5805	Two million gas	Gas

New Oil Fields in Texas Gulf Coast First Six Months 1937

Field	County	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Labelle	Jefferson	Sun Oil Co.'s Hebert Broussard Z, W. B. Burton Sur.	Marginulina	8211–18	48	38
Sandy Point	Brazoria	Henry DeArman's Fite 1, D. Talley Sur.	Marginulina-Frio	6489–6501	47	39
Five Corners	Wharton	*Texas Co.'s Pierce Estate B-5, T. Caldwell Sur.	Frio	5553	80	25.3
South Cotton Lake	Chambers	*Salt Dome Oil Corp.'s Lawrence C-1, S. Barrow Sur.	Marginulina-Frio	6492–6503	600	32
Spurger	Tyler	Republic Production Co.'s Hurd 2, N. Hurd Sur.	Wilcox	7641	408	43
Bammel	Harris	Hamil & Smith's Zapp 1, J. Farwell Sur.	Cockfield	6205–11	72	52
Palacios	Matagorda	Glenn H. McCarthy's Foley Land 1, L. Goodwin Sur.	Frio	7830–80	175	53
North Cheek	Jefferson	Magnolia Petroleum Co.'s Phelan 1, S. Stivers Sur.	Frio	8350–8460	432	53
Wilson Creek	Matagorda	United North & South Development Co.'s Stoddard, B. Cotton Sur.	Frio	9925–78	168	52

New Oil Fields in Texas Gulf Coast the Last Six Months of 1937

Field	County	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Friendswood	Harris	Humble Oil & Refining Co.'s Settegast 1, Perry & Austin Sur.	Frio	5811–6009	650	30
Hitchcock	Galveston	Maco Stewart's Fee 1, J. Spillman Sur.	Miocene	5134–40	60	32
Call	Newton	Houston Oil Co.'s Peavy Moore 1, H. & T. C., Sec. 42.	Cockfield	6908–19	800	29
Seabreeze	Chambers	*Sun Oil Co.'s Acorn 3, H. & T. B., 103.	Frio	8415–40	644	40
Clam Lake	Jefferson	Shell Petroleum Corp.'s McFaddin 1, S. A. Pace Sur.	Miocene	5293	360	....

* First commercial oil wells.

Haystellite improves drilling performance in all formations

TYPICAL RECORDS

NORTHERN LOUISIANA. A four-way bit hard-set with Haystellite Inserts made 535 feet through shale and boulders.

SOUTHERN LOUISIANA. One Haystellite-dressed fishtail bit drilled to 2,180 feet; the second completed the well at 3,700 feet.

KETTLEMAN HILLS, CALIF. This Haystellite-dressed bit made 1,160 feet of out-to-gauge hole through sandy shale—a fine record for this field.

GOVERNMENT WELLS, TEXAS. Many Haystellite-dressed bits have averaged 1,700 feet, and some holes have been completed with a single bit to depths of approximately 2,200 feet.

NEAR DAMON, TEXAS. A 12-inch bit hard-set and hard-faced with Haystellite drilled 1,312 feet and, when pulled, was only 1/8 inch out of gauge.

EAST TEXAS. One fishtail bit dressed with Haystellite products made 2,500 feet of out-to-gauge hole through shells, boulders, and hard shale.

TEXAS GULF REGION. Bit No. 1, hard-set and hard-faced with Haystellite, made 3,009 feet in 60 hours—50 feet per hour. No. 2 followed with 1,140 feet in 33 hours.

CONROE, TEXAS. A typical Haystellite-dressed bit went into the hole at 2,007 feet and drilled to 3,024 feet through the following formation:

From 2,007 to 2,080 feet—Shale and boulders
From 2,080 to 2,310 feet—Sticky shale
From 2,310 to 2,360 feet—Sandy shale
From 2,360 to 2,870 feet—Sticky shale
From 2,870 to 3,024 feet—Hard lime and shale

This 9⅞-inch diameter bit, after making 1,017 feet of hole, was less than 1/16 inch out of gauge.

EAST TEXAS. Three bits, dressed with Haystellite, made the following runs on three different wells:

9⅞-inch bit . . .	2,439 feet
9⅞-inch bit . . .	1,883 feet
11-inch bit . . .	2,202 feet

The first bit started just under the surface pipe at 106 feet, hit the Pecan Gap at 2,465 feet, and drilled to 2,545 feet—80 feet of Pecan Gap after making 2,359 feet above it.

TEXAS GULF COAST. In a comparative test, six bits hard-faced with Haystellite completed a well, while an adjacent well of the same depth and in the same formation required eight bits dressed with other materials. Haystellite-dressed bits averaged one-third more footage per hour.

OILTON, TEXAS. This fishtail bit, hard-set and hard-faced with Haystellite, made 2,030 feet to complete a well, and was good for more. Wells are drilled here with one or two Haystellite-dressed bits, where four or five bits surfaced with other materials were formerly required.

Rotary drilling tools hard-set with Haystellite Inserts and hard-faced with Tube Haystellite set the drilling pace in oil fields everywhere. No matter what type of bits you use or what formations you encounter, you can depend on Haystellite to improve drilling performance. The figures cited here are typical of the records made by Haystellite-dressed bits the world over.

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Gulf Coast Map Supplement

Accompanying this issue is a large scale, three-color map showing fields and prospects in one coloring, refineries and pipe lines in another, and county and cities in still a different shade. The area covered is the Gulf Coast proper, from Jackson County, Texas, on the west to the eastern edge of Louisiana.

is expected to yield 36,000,000 or more barrels ultimately. This is considered the most outstanding 1938 discovery to date in the Texas sector of the coast.

Leading Refining Area

The coastal district is one of the leading refining districts of the world. There are 21 refineries in the area, of which 17 are in the Texas district. The majority of these plants are located on tidewater at Houston, Port Arthur, Texas City and Beaumont. Oil pipe lines carry crude to these points from such distant regions as all parts of Texas, Louisiana, Arkansas, Oklahoma, Kansas, New Mexico, Colorado and Wyoming. Besides the vast pipe line system converging at large refining centers, considerable use is made of barges and tankers.

The daily crude refining capacity of these 21 plants totals nearly 1,000,000 barrels, of which 837,500 barrels are in Texas. The Texas plants at present are operating at about 90 percent capacity, whereas the Louisiana refineries are at 69.6 percent of their capacity.

The Future Bright

When Captain Lucas brought in the first oil gusher at Spindletop in 1901 an oil boom exceeding all previous ones developed, but little did the most enthusiastic personages dream that the Texas-Louisiana Gulf Coast within the next 37 years was to be credited with an ultimate production of 450,000,000,000 barrels. Nor did they have hopes that within the next 37 years the district would yield 150,000,000,000 barrels of oil, and have a discovered but unproduced volume of over 3,000,000,000 barrels.

The Gulf Coast is leading the oil league today, a position formerly occupied by Pennsylvania, Oklahoma and others. However, there are several reasons that lead to the conclusion that the Gulf Coast will maintain its position at the top of the ladder for a good many years.

It is reasonable to believe the region will increase its percentage of known producible reserves. In its favor is the rapid rate of recent new discoveries, its possibilities for deeper production and its present exploratory activity. These should lead to the Texas-Louisiana Gulf Coast procuring a larger share of the United States annual oil yield.

New Sand Discoveries in the Texas Gulf Coast the First Six Months of 1938

Field	County	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Old Ocean	Brazoria	Harrison & Abercrombie's Copland and Osburne 1, Breen Sur	Frio	10660–670	307	54
Palacios	Matagorda	Sun Oil Co.'s Bayshore Farms 1, L. Goodwin Sur	Frio	9245–75	350	54
Clinton	Harris	Stanolind Oil & Gas Co.'s Barraco 1, Reels and Trobough Sur	Miocene	3810–18	408	22
Labelle	Jefferson	Sun Oil Co.'s Broussard and Hebert 3, B. Blackmon Sur	Frio	8600	1066	45.6
Orange	Orange	Union Producing Co.'s Lutcher Moore 2, J. Dyson Sur	Frio	5960	587	41.7
Segno	Polk	Gulf Oil Corp.'s Regan 2, I. & G. N. No. 15	Wilcox	8163–68	625	37
Cleveland	Liberty	Gulf Oil Corp.'s Kirby C-21, J. Pleasant Sur	Wilcox	9090–9100	Gas and distillate	....

New Sand Discoveries in the Texas Gulf Coast the First Six Months of 1937

Field	County	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Green's Lake	Galveston	Sun Oil Co.'s Hughes 7, W. C. M. Baker Sur	Pliocene	2712	Gas	....
West Beaumont	Jefferson	Glenn H. McCarthy's Longe 3, H. Williams Sur	Oligocene	5380	456	29
Old Ocean	Brazoria	Harrison & Abercrombie's Bernard 4, C. Breen Sur	Frio	10293	280	52
Seabreeze	Chambers	Sun Oil Co.'s White 2, H. & T. B. Sec. 128	Frio	8755	Distillate	47
South Bay City	Matagorda	Hammond Exploration Co.'s Croker 1, E. Hall Sur	Frio	8194	169	41
Fannett	Jefferson	Gulf Oil Corp.'s Junker 7, W. H. Smith Sur	Frio	6535	667	40
Segno	Polk	Humble Oil & Refining Co.'s Kirby B-3, M. Victor Sur	Lower Cockfield	5340	480	36
Segno	Polk	J. K. Dorrance's Wing 4, I. & G. N. 15	Lower Cockfield	5243	610	34
High Island	Galveston	Stanolind Oil & Gas Co.'s Cade B-1, M. Dunman Sur	Frio	6695–6710	332	29
West Columbia	Brazoria	Sterling Oil & Refining Co.'s Phillips 1, Geo. Tennille Sur	Frio	5290	480	26
Hull	Liberty	Hamil & Smith's Barngrover 1, J. Devore Sur	Yegua	5705–5806	211	39

New Sand Discoveries in the Texas Gulf Coast the Last Six Months of 1937

Field	County	COMPANY, WELL AND LOCATION	Producing Formation	Depth	Initial Production	Gravity
Clinton	Harris	Stanolind Oil & Gas Co.'s Moody 1, Reels & Trubrough Sur	Miocene	3600	....	....
Old Ocean	Brazoria	Harrison & Abercrombie's Carson 1, C. Breen Sur	Frio	10635–50	275	52
Spurger	Tyler	Republic Production Co.'s Hurd 4, N. Hurd Sur	Sparta	7700–04	520	45
North Cheek	Jefferson	Magnolia Petroleum Co.'s Phelan 2, S. Stivers	Frio	8665–82	670	43.5
Segno	Polk	Gulf Oil Corp.'s Wing 8, I. & G. N. No. 14	Saline Bayou	6261–64	722	44.5
Orange	Orange	Tillery & Ryan's Chesson 1, Wm. Dyson	Frio	5928–46	736	35.3
Port Neches	Orange	Texas Co.'s Stark« 6, M. E. Hall Sur	Frio	5944	552	38.4

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Big Things May Come from New Sparta-Wilcox Trend

By JOHN D. TODD and FRANK C. ROPER
Consulting Geologists

This flow of oil was the "eye-opener" that attracted attention to the Sparta - Wilcox formation, which at present is the center of interest on the Conroe Trend. Shown is the first flow of the discovery well at Villa Platte. It not only proved a large structure, but marked the first Sparta production in Southern Louisiana, thereby extending the limits of proven Sparta-Wilcox production eastward by 100 miles.

THE rocks of Lower Eocene age, of which the Sparta and Wilcox formations form a part, have been known to be oil bearing in their updip facies for many years. Attempts were made to produce oil in Nacogdoches County during the Reconstruction Days in the 1860's, and actual commercial production was obtained in 1877 from the Cook Mountain and Weches section. This oil was from thin sands at near-surface depths, and was of no great commercial significance.

Operators in Eastern Texas and Central Louisiana have long been interested in prospecting this belt of land, which lies between the Cretaceous oil fields to the north and the true Salt Dome Belt to the south. However, most of the earlier operators in the Sparta-Wilcox trend drilled wells on meager information and similar meager finances, with the result that very little oil was found and the trend had the reputation of being a "bad area."

It is only within the past few years that the producing possibilities of the Sparta and Wilcox formations have received any consideration from the Gulf Coast operators. And it is only within the past 18 months that extensive and prolific production from these forma-

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Special Announcement

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tions has become a proven reality.

Both the Sparta and Wilcox formations have been producing oil for the past 10 years at Clay Creek field in Washington County, Texas. This production overlies a piercement type dome, and is from relatively shallow depths. The Sparta-Wilcox production at Clay Creek has been of no great commercial significance, and was not sufficient to induce further pioneering in the trend.

Recent Discoveries

Republic Production Company and Houston Oil Company own hundreds of thousands of acres of fee lands located in the heart of the trend. Because of these holdings these companies always have been intensely interested in the possibilities of the area. After an intensive geological and geophysical study of the area completed in 1936, these firms decided to drill a test well in the vicinity of Joe's Lake in southeastern Tyler County, Texas.

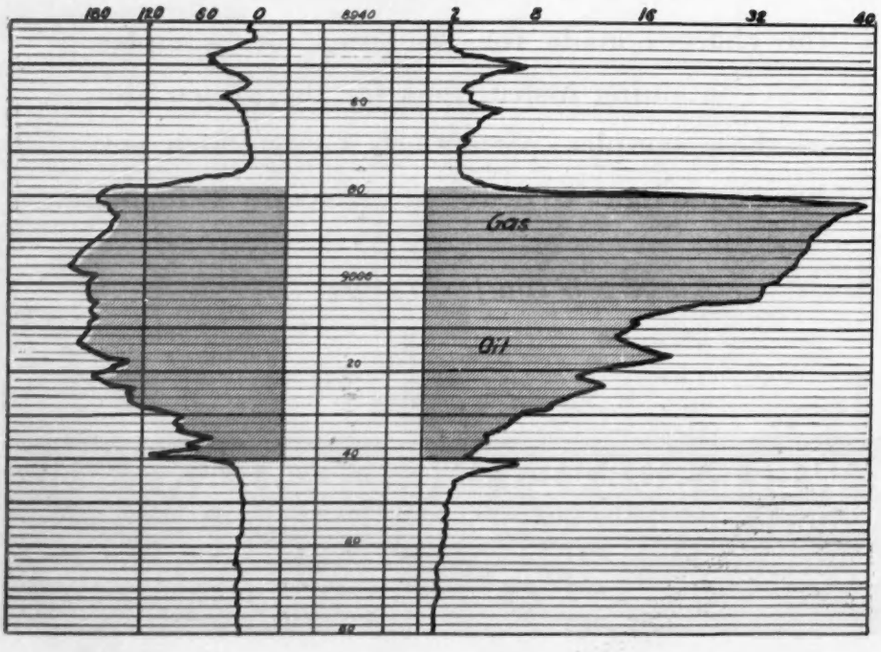
This test well, carried in the name of Republic Production Company and Houston Oil Company's Hurd 1, was projected originally as a Cockfield and Upper Saline Bayou test. These formations proved unproductive, but encouraged by shows encountered, it was determined to carry the well deeper. Previous wells in the trend had penetrated the Yegua section, but no well had gone through the Cook Mountain and Mount Selman to test the lower formations. While not a commercial producer Hurd 1 was of great importance in that it penetrated about 800 feet of the Wilcox and found it to carry an excellent section of sand. Hurd 1 had excellent shows and was bottomed in the Wilcox at 8213 feet.

The encouragement r e c e i v e d from the sand section and the shows in Hurd 1 lead to the immediate drilling of Hurd 2 by the same operators. Hurd 2 was completed at a depth of 8048 in the upper part of the Wilcox on May 6, 1937, and had an intial production of 412 barrels daily on a ¼-inch choke. Hurd 2 is of great historic importance in that it is the first well to ever procure Wilcox production from over a deep-seated salt structure, and in that it proved the existence of a new and prolific sand section in the old Conroe trend area.

The next important discovery to further emphasize the growing importance of this new trend was at Ville Platte in Evangeline Parish, Louisiana. Continental Oil Company's Tate 1, discovery well for the Villa Platte field, came in on September 20, 1937, making 177 barrels per day with a large amount of gas from Sparta sand at 8974-9034 feet. Later the well was completed with a more favorable oil/gas ratio. This well was important in that it not only proved the existence of a very large and prolific structure, but also in that it marked the first Sparta production for Coastal Louisiana. Discovery of the Ville Platte field immediately opened the eyes of operators to the possibilities of a prolific sand section with an enormous regional area of distribution. The Ville Platte discovery extended the limits of proven Sparta-Wilcox production eastward by over 100 miles, and definitely indicated that a large portion of the trend would lie in Louisiana.

The next of the Sparta-Wilcox strikes was Gulf Oil Corporation's Ragan 2 at Segno in Polk County, Texas. While the Segno structure had been productive previously at shallower depths, the Ragan well was the first to prove Wilcox production for the field. It was completed on May 28, 1938, from a depth of 8167 feet, in the very top of the Wilcox, making 635 barrels of 36.5 gravity oil daily on a ¼-inch choke. Discovery of production from the Wilcox at Segno indicated that the good sand conditions continued westward from Spurger, and thus indicated the possibility of a "blanket sand" section in the upper Wilcox. The Ragan well had an extensive section of saturated sands which point to a high ultimate recovery and indicates per acre reserves that will compare favorably with fields in the true Salt Dome Belt.

The next Wilcox production is attributed to Gulf Oil Corporation's-Kirby Lumber Company 1 of the Cleveland field in upper Liberty County, Texas. This well was completed from the Wilcox on June 21, 1938, as a gas and distillate well with a ratio of 104,600 cu-



Electric survey of producing section at Villa Platte.

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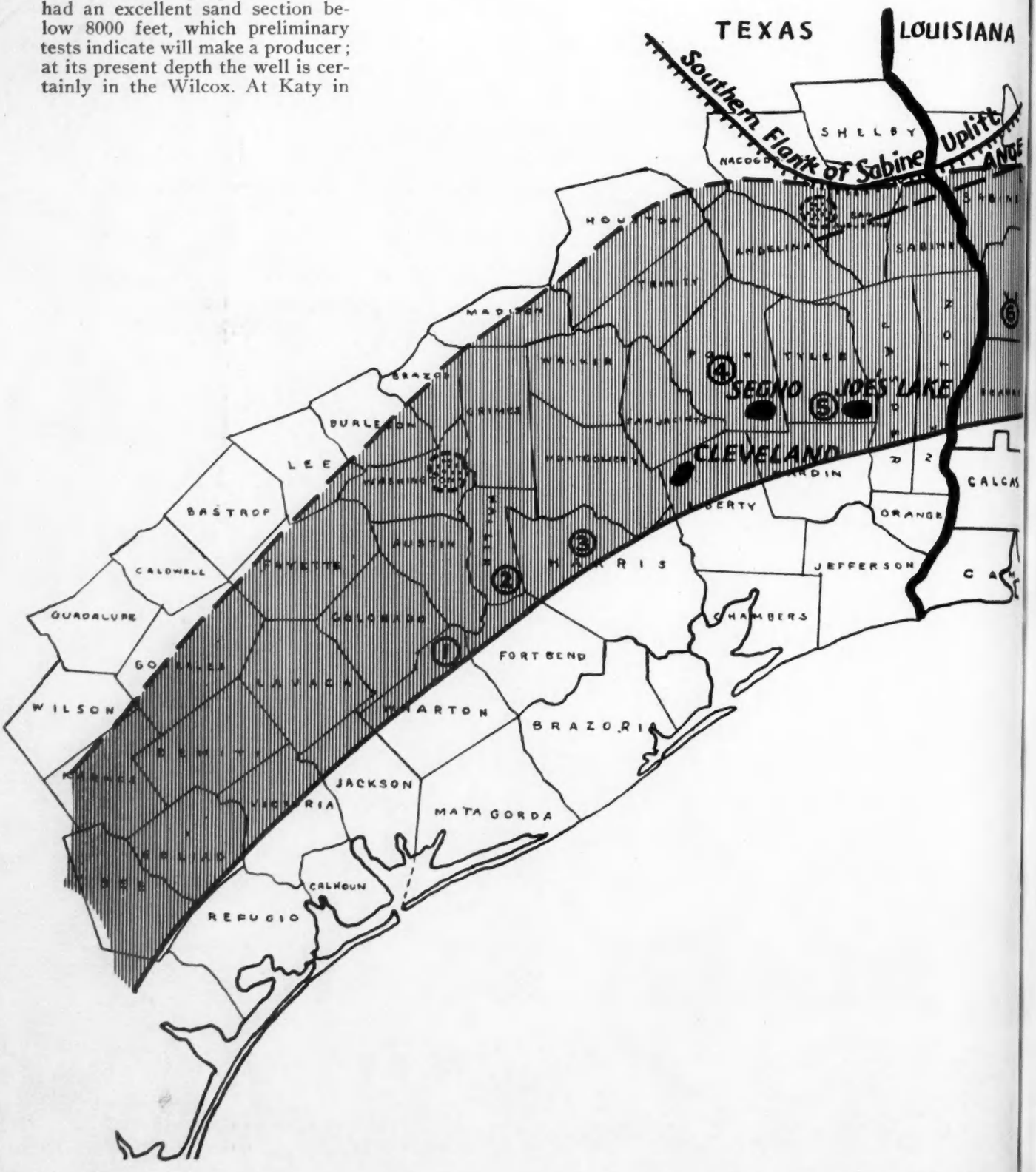
bic feet of gas to each barrel of oil. There is reason to believe that if the well is set lower in the sand it will have a more favorable gas/oil ratio and probably will make an excellent producer.

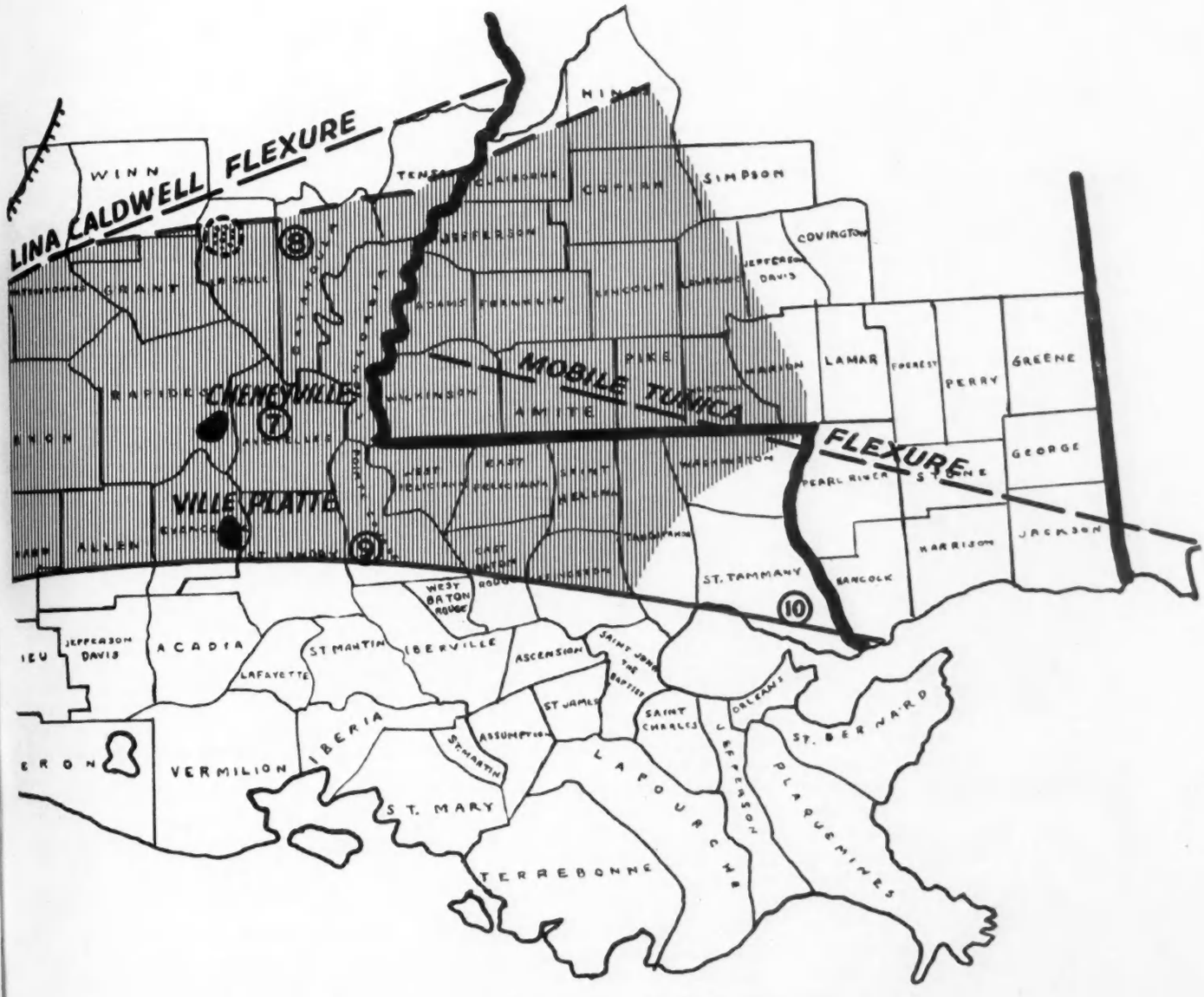
Two other areas are looming at the date of writing (July 15, 1938), as probable Wilcox producers. At Cheneyville in Rapides Parish, La., The Texas Company's Weil 3 has had an excellent sand section below 8000 feet, which preliminary tests indicate will make a producer; at its present depth the well is certainly in the Wilcox. At Katy in southern Waller County, Texas, Stanolind Oil & Gas Company has a sand in its Freeman 1 that is of Wilcox age, and appears likely to make a gas or distillate well.

The proven productive limits of the Sparta Wilcox trend stretching from Clay Creek in Washington County, Texas, to Ville Platte in Evangeline Parish, Louisiana, now cover an area 250 miles long along



the strike of the beds. There is every reason to believe that the trend will prove productive much farther in both directions. All indications are that the problem will be more one of finding the structures than of finding favorable sand areas.

As shown on the accompanying plat the southern limit of the trend is drawn on the limits of commercial drilling depths under the pres-



Probable Sparta Wilcox productive limits

Older Sparta Wilcox producing areas

Recently discovered oilfields in Sparta Wilcox trend

Important wildcats that have penetrated the Sparta Wilcox section

1. *Strake P. Co. Strunk 1*
2. *Stanolind Freeman 1*
3. *Superior Butler 1*
4. *Jackson et al Gates 1*
5. *McCarthy McShane 1*
6. *Weir & Smith Sec. 14*
7. *So. Star Pet. Co. Boyette 1*
8. *Texas Co. Tensas Delta B-1*
9. *Batchelor Oil Co. Hackney Lumb. Co. 1*
10. *Danciger O. & R. Co. Holdsworth 1*

Geological Section

Pleistocene				Beaumont Lissie Reynosa	
Pliocene Miocene				Fleming	
Oligocene	Upper			Catahoula	
	Middle			Discorbis Heterostigina Marginulina	
	Lower			Frio Vicksburg	
Eocene	Jackson			Whitsett McElroy (T. Hock) Caddell (T. Dibol.)	
	Claiborne	Upper	Yegua	Cockfield	
				Upper Saline Bayou	
				Lower Saline Bayou	
		Lower	Cook Mountain	Milams Crockett Sparta	
			Mount Selman	Weches (Lamarkina Claibornensis) Queen City Reklaw Carrizo	Cane River in Louisiana
	Wilcox			Sabinetown Rockdale Seguin	
	Midway				
Cretaceous					

ent conditions. As greater depths become less costly the limits of the trend may be extended southward, in some places if not all along the line.

The upper limit of the width of the trend is based upon the present unknown connate-meteoric water level. Sufficient data is not available to fix this contact; the great porosity of the sands in the formation would point to a down dip position for this contact, while the slow rate of dip for these beds looks in the other direction. Both the Sparta and Wilcox carry large bodies of sand to their outcrop and should produce oil as far up dip as conditions are favorable for the formation and accumulation of petroleum.

Sparta Section

The history of oil production on the Gulf Coast for the past 37 years has been one of drilling deeper and deeper to formations that lie farther and farther down the geological section. Not only is 15,000 feet drilling fast becoming a reality, but operators are now planning on production from almost at the very base of the Tertiary. Just as the discovery of Conroe made the conservative oil fraternity Cockfield conscious, so are the recent discoveries in the trend making operators interested in the Sparta and Wilcox formations.

The Sparta formation lies at the base of the Cook Mountain in the Lower Claiborne Group of Middle Eocene Age. It was referred to by early Texas geologists as the Nacogdoches formation; but being identified later as the same formation as outcropping at Sparta, Bienville Parish, Northern Louisiana, the name Sparta came into general use through priority and its acceptance by the United States Geological Survey.

The Sparta is the sand and sandy clay member above the *Lamarkina Claibornensis* zone of the Weches formation and below the contact of the chocolate colored, glauconitic, ferruginous, fossiliferous sand of the overlying marine Crockett with the coarser, more carbonaceous, non-fossiliferous continental beds of the Sparta itself. In well sections there are several large species of Operculina which are picked as the forerunner of the Sparta.

The Sparta is well exposed at its type locality in Northern Louisiana where it consists of light gray to grayish brown sands of continental origin. The upper portion shows shore conditions with beach sands and dune deposits predominating. Cross bedding is prevalent in parts of the section. The grains are subangular to rounded with small interspersed grains. It consists at the outcrop of about 70 percent sand, 25 percent sandy shale and clay, approximately 3 percent of glauconite, and occasional amounts of lignite and carbonaceous matter. It is unconsolidated as a sand but consolidated as a shale and usually is liaminated throughout the entire section. Marine fossils are rare, with only occasional fragments and reworked secondaries being found.

At its Texas outcrop in Lee, Bastrop, Fayette and Burleson counties the Sparta is a loose, unconsolidated sand of great permeability. The large amount of sand exposed and its great permeability make it highly probable that meteoric waters have infiltrated the formation for unusually long distances down dip. This is one reason for assuming that the meteoric connate contact will be a considerable distance down dip. It is interesting to note that at this Central Texas outcrop the Sparta actually carries more sand than the Woodbine, (producing zone in the great East Texas field), which hints at the productive possibilities of the formation.

The Sparta is of great subsurface distribution. From its outcrop southward it underlies most of the State of Louisiana; it has been found in wells as far down dip as Township 5 South but its southern limits are not known. Westward into Texas it underlies East Texas, South East Texas, parts of Central Texas and at least as far into Southwest Texas as McMullen County, where it has been identified in wells.

The Sparta formation thins from its type locality southwestwardly, but in a southeastward direction it grows progressively thicker. Its thickness, at most points, ranges between 250 and 600 feet. Very probably the down dip facies may show marine conditions, as the formation is expected to wedge out seaward and expand landward. From well samples the Sparta represents a better sand section in Louisiana than in Texas, and it is likely that more will be heard of the Sparta formation east of the Sabine River.

At Ville Platte the production is definitely of Sparta age, since it overlies the Cane River (the Louisiana equivalent of the Texas

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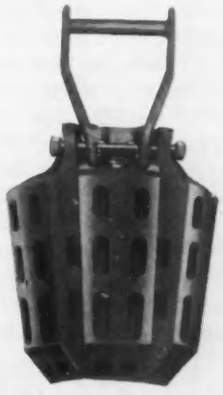

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Weches). In the field proper the formation averages about 500 feet in thickness, being topped at 8556 feet in the discovery well and Cane River being logged at 9040 feet. At this point it is approximately 35 percent fairly clean sand, 60 percent sandy shale, and the remainder shale with some lignitic, glauconitic and carbonaceous materials. The producing sand at Ville Platte varies from 58 to 74 feet in thickness and averages around 64 feet, and is composed of light grayish brown, medium grained, angular to subangular sand grains.

Wilcox Formation

The Wilcox formation includes those deposits which lie below the glauconitic, fossiliferous sands of the Claiborne and above the marine clays of the Midway. It comprises a heterogeneous, chiefly non-marine series of sands, sandy lignitiferous shales, clays, crossbedded continental sands and lignite lentils. The sands are grayish green, medium to subangular grained, and at times lightly carbonaceous and glauconitic. The upper portion of the Wilcox carries a large proportion of sands, some ranging from 50 to 100 feet in thickness; this portion of the formation is largely continental but at places shows some interfingering of marine formations such as would result from a transgressing shoreline. Very few wells have penetrated deeper than the uppermost part of the Wilcox and it is from this top portion that the present fields are producing.

Microscopic study reveals a scarcity of fossils but occasional secondaries and reworked fragments are found. Surface studies of the formation have been extensive, but little is known of the formation's characteristics downdip. It is reasonable to assume that with the drilling of deep tests into the lower part of the Wilcox indigenous fossils will be studied and identified.

The exact thickness of the Wilcox in the trend here under consideration is not known, as the entire section has not been penetrated by the drill. As much as 900 feet actually has been penetrated in northern Harris County, Texas, and based on its known thickness at other points updip it is reasonable to assume that it is close to 2000 feet in thickness.

The subsurface extent of the Wilcox, while not definitely delineated, is known to be enormous. Its type locality is in Alabama and it has been mapped to the Rio Grande River. It has been known and has been of commercial importance from prehistoric times.

The first Spanish explorers in Texas found the Indians mining coal from the Wilcox in Bastrop County. To this day practically all Texas coal is produced from this formation. The palustrine and lacustrine origin of the Wilcox gives it such a high carbonaceous content that a fair grade of lignite coal is mined from it. The occurrence of coal and oil in the same formation, while commonplace in other geological provinces, has an element of novelty on the Gulf Coast.

It is interesting to note that the interval between the Cockfield and Wilcox is much greater in Texas wells than it is in Louisiana. This interval is at least 1000 feet greater in the Texas wells. The pronounced decrease in this interval is due to the fact that the Queen City and Reklaw formations pinch out eastward with some thinning on the Yegua. Therefore, in the Louisiana wells a part of the Texas section is missing.

The production at both Spurger and Segno is definitely of upper Wilcox age, and not of Sparta, since it occurs below the *Lamarkina claibornensis* zone in the Weches. As far as it has been penetrated, approximately 35 percent of the section is sand and the remainder sandy shales and clays. The sand sections range from 20 to 50 feet in thickness, and some of the wells have encountered large aggregates of sand.

Exploration

The expected continuous sand beds of this entire trend offer a most attractive area in which to search for new structures, and an area in which a large percentage of the structures found can be expected to be oil fields. So far no heaving shales have been encountered to limit drilling depths in the trend. The greater part of its area is very accessible both for geophysical work and for drilling, which makes the area more attractive by reason of lower costs.

Considering the small number of wells that have been carried to the Sparta Wilcox, five new producing areas is a very high percentage of oil wells; probably higher than on the Coast itself. These factors all contribute to make this one of the most probable areas from which to expect future petroleum reserves, and they explain why companies are directing more and more of their exploration budgets in this direction.

Another reason why companies are showing increasing interest in the trend is that the Coast area has been worked fairly thoroughly with present geophysical methods. On the other hand the Sparta-Wilcox trend offers much virgin territory that has never been surveyed geophysically. Also, the greater part of the trend that has been geophysically worked was surveyed with now, more or less, obsolete instruments and methods.

The fact that the Sparta-Wilcox trend lies adjacent to the Oligocene trend is of great psychological advantage to it, as an operator always prefers to go into an area close to the provinces with which he is familiar already. For this reason the Sparta-Wilcox trend is receiving and will continue to receive more of the attention of Gulf Coast operators than any farther removed area. The Sparta-Wilcox beds seem to become suitable for petroleum accumulation just about the point where the Oligocene ceases to be a satisfactory reservoir; it looks like Nature might have "planned it that way." It is interesting to note that most of the new Sparta-Wilcox producing areas are from the southern and deeper part of the trend, probably because it is closer to home, i. e., the Oligocene trend.

Conclusion

The more one studies the Sparta-Wilcox trend the more favorable factors come to notice and the greater its possibilities appear to be. It covers an area equal in size to many of the states, and in its millions of acres are believed to lie many undiscovered oil fields.

All indications are that the structures will be large and the pay sands thick, so that those who find oil fields will be rewarded richly. There is no way of predicting how many oil fields will be found in this trend, but the most optimistic guess will probably fall far short of the ultimate results.

When possibilities are balanced against costs it appears that this trend is one of the most attractive areas for prospecting in the United States, and this explains the widespread interest in the area among those in a position to know the future trends of the oil business.

This area has been neglected in the past, but it will be prospected much more intensively in the immediate future than ever before. Hundreds of prospects will be found and drilled and many oil fields will be discovered in it. More and more will be heard of this trend.

Natural Gas in Texas Gulf Coast Expands Rapidly

By C. A. WARNER
Houston Oil Company of Texas

THE production of natural gas in Texas and its transportation and utilization have advanced with amazing rapidity until the industry is now of major importance. It furnishes gainful occupation to thousands, provides clean and efficient fuel in the majority of homes and factories, yields thousands of barrels of gasoline daily, and is the principal source of carbon black.

It is difficult to realize that this great industry of today was not in existence in Texas 50 years ago and that its greatest progress has been within the last 12 years. Its origin may well be traced to the accidental discovery of gas at a shallow depth in a well being bored for water near Greenvine in Washington County. The discovery was in 1879, and the gas was piped to a near-by farm house and used for fuel. The first known utilization of gas as a fuel in Texas was therefore in the Gulf Coast area. Other wells were bored near the discovery test during the next four years, and also in 1888 and 1889. Two of the wells were reported to have had a total daily capacity of approximately one million cubic feet in December, 1888. Some difficulty was encountered in producing the gas, and, as the market was very restricted, no attempt was made to carry on any considerable development. The production from the wells declined gradually, and no further activity along this line was manifested in the coastal area until after the discovery of oil at Spindletop in 1901.

Seepages of natural gas in the Gulf Coast area had been known for many years, and reference was made to its existence at Sour Lake prior to 1860. It had been noticed in the vicinity of the mound south of Beaumont prior to 1900, and was of considerable interest to Patillo Higgins, who utilized gas from a depth of about 60 feet for camp fuel as early as 1894. After the discovery of the Spindletop field, a diligent search was made for other topographic mounds, and careful attention was given to all gas seepages as a possible clue to the location of additional oil fields. The value of such clues may be determined from the accompanying map, on which are shown many of the localities where gas exuded at the surface or was observed in shallow water wells. It is interesting to note that of the 48 locations shown, 37 have been proven for production of oil or gas.

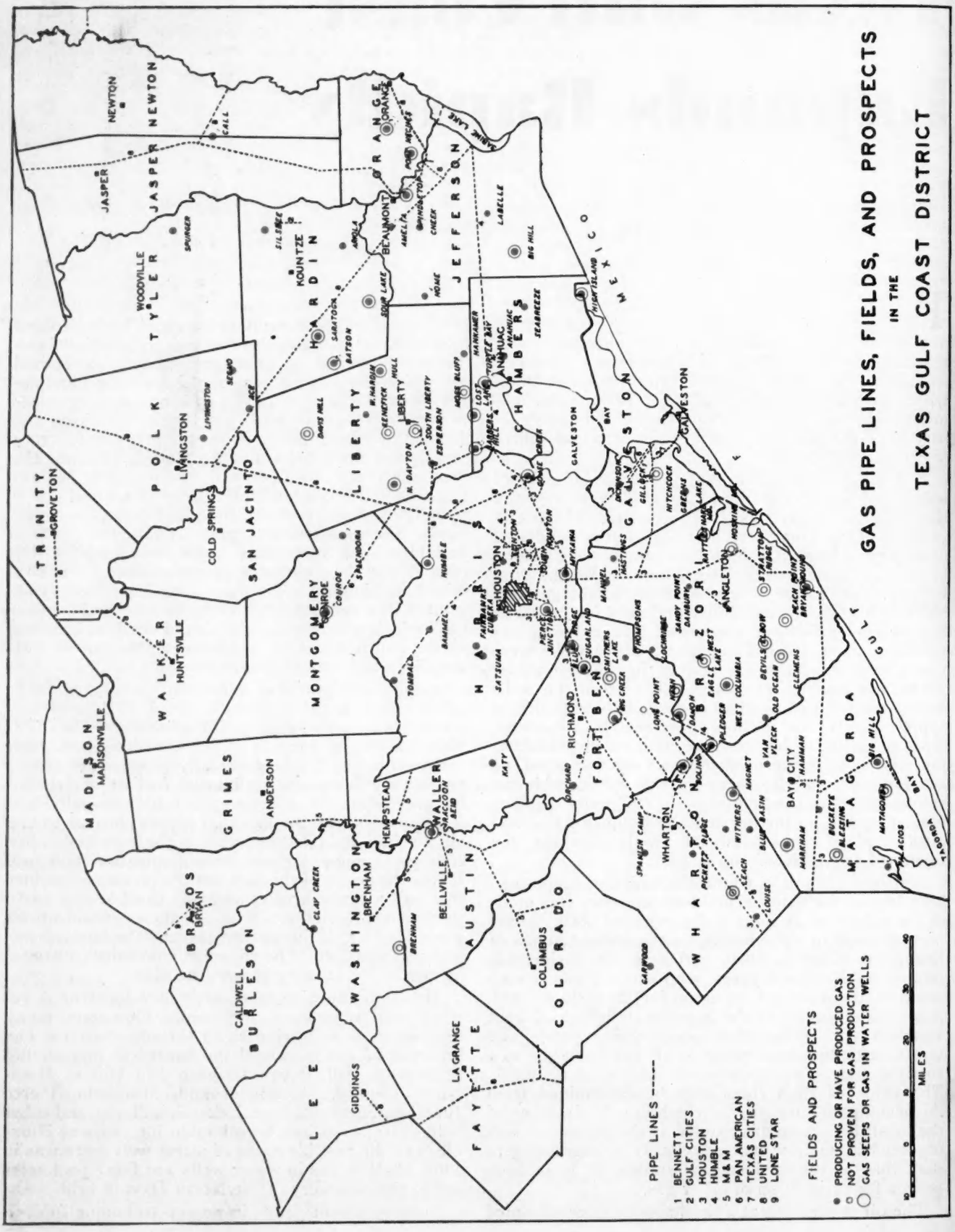
The oil production at Spindletop was accompanied by a considerable amount of gas, and high-pressure reservoirs of it were encountered frequently above the oil pay. The apparent existence of unlimited quantities of so convenient a fuel fired the imagination of local capitalists, and a company was organized to supply Beaumont with gas. The undertaking was doomed to failure, however, for the pressure fell very rapidly and the project was abandoned. This was the first experience for Texas operators with shallow gas on a salt dome, and the history of natural gas at Spindletop was repeated time and again in other fields. The pressure was great enough to result in bad blow-outs, and many holes were lost for that reason, but the volume was not sufficient for sustained production. The operators also were confronted in some instances with the so-called "poison gas" which was responsible for the death of humans, cattle, and fowls. This was particularly true at Batson, Sour Lake, and Spindletop.

In the development of the many Gulf Coast fields which have been discovered since 1901, gas has proven both a blessing and a nuisance. It has furnished a clue to location of fields, yielded some fuel, and resulted in the loss of many holes. Until recent years, its efficient utilization as a fuel was precluded by the small volume contained in the individual reservoirs and by the fact that it was cheaper to use oil for fuel than to construct separators and other equipment necessary for its accumulation and use. It was the desire of the operators to procure a product that had a ready market and was capable of a fairly sustained production. Both of these specifications were filled by oil but not by gas, and the latter therefore was disposed of by the most convenient means—by fire or by blowing it into the air.

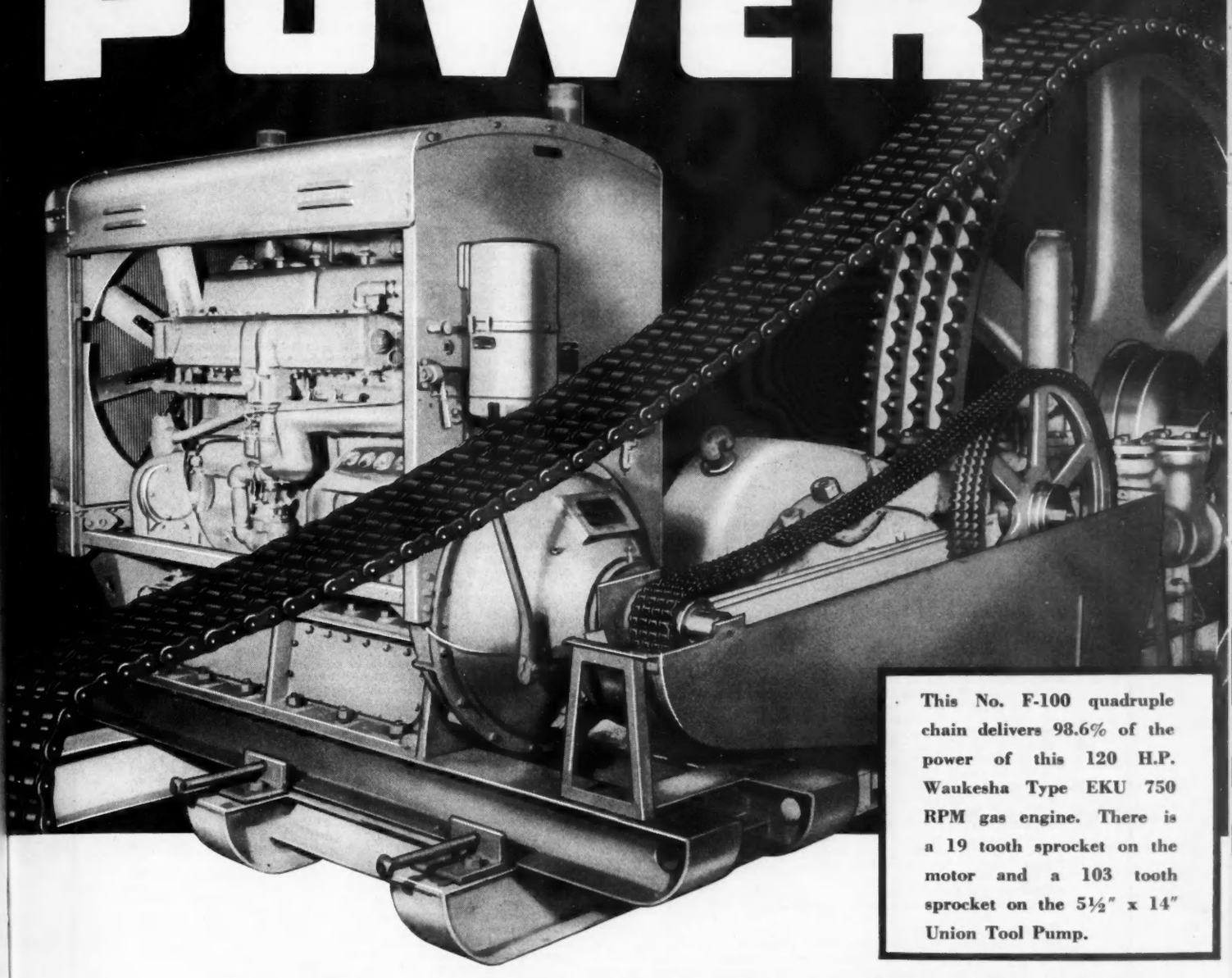
Although the history of early development is replete with records of spectacular blow-outs, many discoveries were attributed to surface seepages. The presence of gas increased the hazard of prospecting at Barbers Hill, Bryan Heights, Big Hill in Matagorda County, Damon Mound, Markham, Pierce Junction, Saratoga, Sour Lake, Spindletop, and other fields. Gas seeps had been known for years at Humble, and the first blow-out of a test well there was in 1902. Shallow gas in water wells and fence post holes led to the discovery of the North Dayton field.

In more recent years, improved technique in drill-

ing and a more comprehensive knowledge of the conditions under which gas is encountered in Gulf Coast reservoirs have operated to reverse the opinion of early operators that commercial production of gas was not possible from a coastal field. A greater appreciation of the value of the efficient use of gas in the production of oil has likewise tended to bring about its conservation. This is particularly well illustrated in the Conroe field, where the gas cap is being conserved to assist in the lifting of the oil to the



POWER



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surface by reservoir pressure, and also in the Sugarland field, where the gas produced is returned to the field to repressure the sand.

As a matter of record for convenient reference, a brief summary of the existence of gas in connection with fields and prospects in the Texas Gulf Coast is given below. In this summary, producing gas fields and gas prospects are shown; other data include early indications of gas, if any, producing horizons, pipe lines connected to the field, reported total production in thousands of cubic feet during 1937, and number of wells reported producing gas during 1937. The pro-

Summary of Natural Gas in the Texas Gulf Coast

Fields which reported gas production during 1937 are shown in capital letters; prospects not yet proven for production are indicated with an asterisk (*); other data includes early indications of gas if any were present, producing horizons, pipe lines connected to the field, reported total production in thousands of cubic feet during 1937, the number of wells reported producing gas during 1937. The production figures for the year represents the total amount reported, not all which was necessarily transported by pipe lines, as a considerable amount may have been used for lease and other purposes.

Ace—Productive from Cockfield; gasoline plant in the field.
AMELIA—Productive from middle Oligocene and Frio; 76,458 M.C.F.; 2 wells.
ANAHUAC—Productive from Frio; 89,600 M.C.F.; 4 wells.
ARRIOLA—Wild gas well turned into oil well; small gas production; 6896 M.C.F.; 2 wells.
Barbers Hill—GAS SEEPS; trouble with gas in early drilling; has produced some gas from middle Oligocene and Frio.
Bammel—Productive from Cockfield.
BUCKEYE—Some production from Frio; gas taken by Houston Pipe Line; 16,979 M.C.F.; 1 well.
Batson—GAS SEEPS; very little trouble with blow-outs; early gas was known as "poison"; some production secured from Miocene and Oligocene.
Big Creek—GAS SEEPS; very little gas produced.
Big Hill, Jefferson County—GAS SEEPS; has produced a small amount from Miocene.
Big Hill, Matagorda County—GAS SEEPS; many blow-outs; production was chiefly from cap rock.
Blessing*—GAS SEEPS.
Blue Basin—Productive from Miocene.
Blue Ridge—GAS SEEPS; has produced very little gas.
BOLING—GAS SEEPS; some gas was produced and piped from field during its early development; is currently productive from super-cap sands, cap rock, Miocene, Oligocene, and Frio; 19,379 M.C.F.; 2 wells.
Brenham—GAS IN WATER WELLS.
Bryan Mound—GAS SEEPS; produced gas soon after discovery of Spindletop field.
CONROE—GAS SEEPS; large reserve in gas cap of Cockfield; two casinghead gasoline plants in the field; gas is piped to Conroe and also taken by United; 272,035 M.C.F.; 19 wells.
CLINTON—First well had abnormally high pressure; productive from Cockfield; gas taken by Houston Pipe Line; 579,062 M.C.F.; 2 wells.
CALL—Very minor production from Cockfield; 2400 M.C.F.; 1 well.
CHEEK—Production from Frio; 10,853 M.C.F.: 1 well.
CLAY CREEK—Productive from Claiborne; 275,107 M.C.F.; 5 wells.
Clemens*—GAS SEEPS.
Damon Mound—GAS SEEPS; spectacular blow-outs in early development; was productive from shallow sands and Oligocene.
DANBURY—Productive from Miocene; 71,946 M.C.F.; 1 well.
Davis Hill*—GAS SEEPS.
Devils Elbow*—GAS SEEPS.
DICKINSON—Discovery well blew out; productive from Frio; gasoline plant in the field; gas taken by Bennett, Pan American, and Houston Pipe Line; 3,376,448 M.C.F.; 8 wells.
Eagle Nest Lake*—GAS SEEPS.
Esperson—Has produced some gas from Miocene, Oligocene, Jackson, and Claiborne.
EUREKA—Productive from Cockfield; gas taken by Houston Pipe Line; 1,407,264 M.C.F.; 1 well.
Fairbanks—Productive from Cockfield.
Garwood—Has produced some gas from Cockfield.
GILLOCK—Productive from Frio; gas taken by Houston Pipe Line; 1,583,199 M.C.F.; 4 wells.
Goose Creek—GAS SEEPS; large production in early development of the field, chiefly from Miocene and middle Oligocene.
GREENS LAKE—Productive from Miocene; 25,149 M.C.F.; 1 well.
HAMMAN—Productive from Frio; gasoline plant being constructed in field; gas taken by Houston Pipe Line; 148,991 M.C.F.; 1 well.
Hankamer—Minor production of gas from Miocene and middle Oligocene.
HASTINGS—Productive from Miocene and Frio; 2,213,458 M.C.F.; 4 wells.
High Island—GAS SEEPS; small early production; chiefly from Miocene.
Hitchcock—GAS SHOWINGS IN WATER WELLS; minor production from Miocene.
Hull—GAS SEEPS; has produced some gas from Miocene, Jackson, and upper Claiborne.
Humble—GAS SEEPS; noted for disastrous blow-outs; production was from Pliocene, Miocene, Jackson, and Claiborne.
Hoskins Mound—GAS SEEPS; minor early production; blow-out recorded as early as 1904.
KATY—Productive from Cockfield; 77,370 M.C.F.; 2 wells.
Kenefick*—GAS SEEPS.
LA BELLE—Productive from Frio; 165,282 M.C.F.; 1 well.
Leach*—GAS SEEPS.
Livingston—Gas cap in Cockfield.
LOCHRIDGE—Productive from Miocene and Frio; 199,747 M.C.F.; 1 well.
Lost Lake—GAS SEEPS; one blow-out; has produced some gas from Miocene.
Louise—Minor production from middle Oligocene and Frio.
Markham—GAS SEEPS; many blow-outs; early considered as a good reserve and piped to Houston during early development, but production proved to be very short lived; production was from Miocene and Oligocene.
Matagorda*—GAS SEEPS.
Magnet—GAS SEEPS; productive from Frio.
MANVEL—Productive from Miocene and middle Oligocene; gas taken by Houston Pipe Line; 504,747 M.C.F.; 2 wells.
Moss Bluff—GAS SEEPS.
MYKAWA—GAS IN OLD WELLS; produces or has produced from Miocene and Frio; gas taken by Houston Pipe Line; 741,170 M.C.F.; 1 well.
Nash—GAS SEEPS.
NOME—Productive from middle Oligocene; 398,344 M.C.F.; 6 wells.
North Dayton—GAS SEEPS AND SHOWINGS IN SHALLOW WATER WELLS AND FENCE POST HOLES; has produced appreciable quantities, chiefly from Jackson; some sulphur gas was produced from cap rock and sands above it.
Old Ocean—Productive from Frio.
ORANGE—GAS SEEPS; early development encountered trouble with gas pockets; productive from Miocene and Frio; gas taken by United; 216,381 M.C.F.; 1 well.
Orchard—Minor production from Miocene and Frio; gas in Cockfield.
Palacios—Produced some gas from Frio.
Peach Point*—GAS IN SHALLOW WELLS.
PICKETT RIDGE—Productive from Frio; gas taken by Houston Pipe Line; 1,177,519 M.C.F.; 2 wells.
Pierce Junction—GAS SEEPS; many blow-outs; one of first fields to produce commercially; has produced a relatively large amount in the past.
PLEDGER—GAS SEEPS; productive from middle Oligocene-Frio; gasoline plant in the field; gas taken by Humble; 8,050,957 M.C.F.; 11 wells.
Port Neches—GAS SEEPS; has produced some gas from Miocene.
RACCOON BEND—GAS SEEPS; productive from Oakville, Jackson, and Cockfield; gasoline plant in the field; gas taken by M & M Pipe Line; 633,476 M.C.F.; 6 wells.
Rattlesnake Mound*—GAS SEEPS.
Sandy Point—Productive from middle Oligocene and Frio; gasoline plant in the field.
Saratoga—GAS SEEPS; many blow-outs; was productive from Pliocene, Miocene, and Oligocene.
Satsuma—Productive from Cockfield.
SEABREEZE—Productive from Frio; 486,159 M.C.F.; 4 wells.
Segno—Productive from Cockfield.
Silsbee—Productive from Cockfield; gas taken by Gulf Cities Natural Gas.
Smithers Lake*—GAS SEEPS.
Sour Lake—GAS SEEPS; several blow-outs; early gas known as "poison" and secured chiefly from cap rock.
SOUTH HOUSTON—Productive from Miocene and middle Oligocene; gas taken by Houston Pipe Line; 140,116 M.C.F.; 1 well.
South Liberty—GAS SEEPS; blow-outs in early development; only minor production.
Spanish Camp—Productive from Miocene.
Spindletop—GAS SEEPS; several blow-outs; gas had sulphur content and was injurious to health; early supply considered large, but declined rapidly; first Gulf Coast field from which gas pipe line was projected; production was chiefly in sands above oil pay.
Splendora—Produced some gas from Cockfield.
SPURGER—Productive from Cockfield; 17,370 M.C.F.; 1 well.
Stratton Ridge—GAS SEEPS.
Sugarland—GAS SEEPS; productive from Miocene and Oligocene; gas is used in repressuring.
Thompsons—Productive from Miocene, Oligocene, and Frio.
TOMBALL—Large reserve in gas cap of Cockfield; gasoline plant in the field; gas taken by Humble; 3,567,093 M.C.F.; 44 wells.
TURTLE BAY—GAS SEEPS; productive from Frio; 136,422 M.C.F.; 3 wells.
Van Vleck—Productive from Frio.
WEST HARDIN—Productive from Cockfield; 165,651 M.C.F.; 1 well.
West Columbia—GAS SEEPS; produced some gas during early development of field.
WITHERS—Productive from middle Oligocene; 627,441 M.C.F.; 2 wells.

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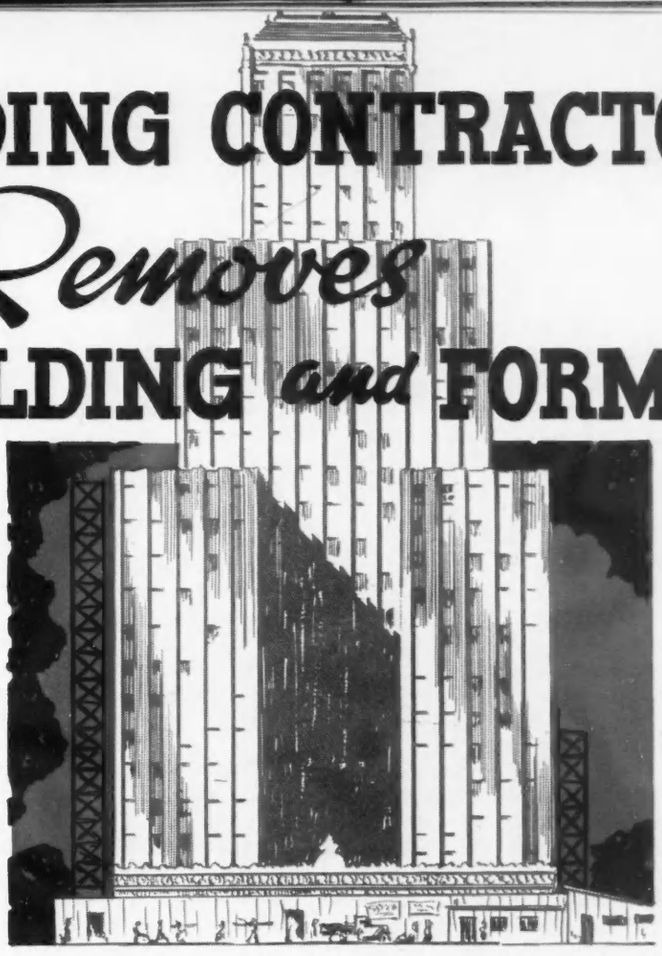

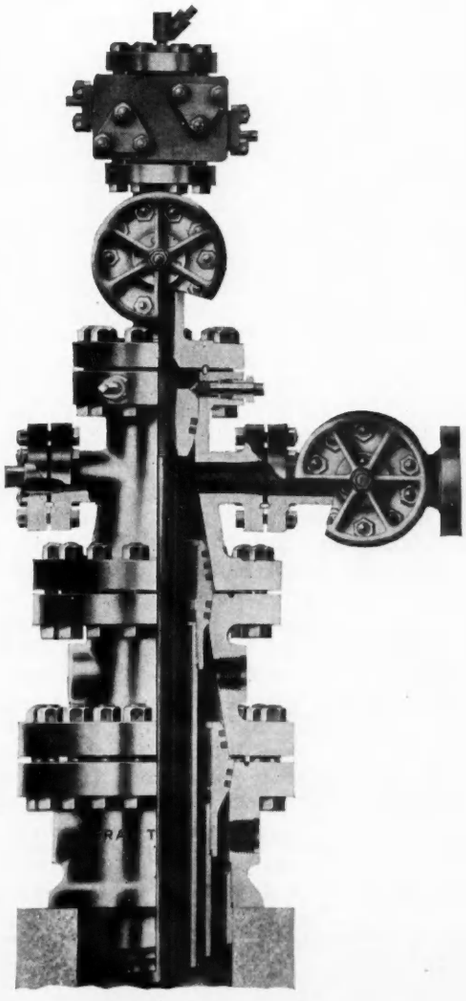

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duction for the year 1937 represents the total amount reported, not all which was necessarily transported by pipe lines, as a considerable amount may have been used for lease or other purposes. This is well exemplified by the reported production and utilization of gas from the Gulf Coast District during the month of April, 1938. The daily average production from the district during that month was reported to have been 102,470,000 cubic feet of dry gas and 58,197,000 cubic feet of casinghead gas. Of the dry gas reported, 42,146,000 cubic feet were taken by pipe line for distribution; 1,236,000 cubic feet was utilized for gas lift and repressuring; 16,766,000 cubic feet for miscellaneous lease operations and drilling; and 42,322,000 cubic feet were delivered to gasoline plants. Gasoline plants therefore received a total of 100,519,000 cubic feet of gas daily and delivered 40,628,000 cubic feet to pipe lines. The total amount of gas taken from wells in the Texas Gulf Coast district by pipe lines during April for distribution for light and fuel accordingly averaged 82,774,000 cubic feet daily. The gasoline plants recovered a daily average of 75,039 gallons from the gas processed. This was an average of .747 gallons per thousand cubic feet of gas.

It was characteristic of the fields developed during the first quarter of this century that the majority of them encountered rather appreciable quantities of gas either with the oil pay horizon or above it. In practically every instance, however, the pressure dropped very rapidly and the production was exceedingly short lived. Whether or not this was due to the fact that such fields were of the shallow type, and frequently of the piercement type salt dome, is a matter for conjecture. There appears to be some relationship between the gas seepages that were observed in practically all such fields and the relatively small volumes of gas produced. Such relationship, however, becomes less and less pronounced in fields like Conroe and Pledger where, although gas seepages were known to exist, the producing horizons are encountered at much greater depths than in the earlier fields. This is undoubtedly due to the fact that the deeper reservoirs were more effectively sealed off against upward migration of the gas. The seepages noted at the surface were therefore from more shallow minor horizons where gas had accumulated following deep folding of the strata.

Although gas has been produced in varying quantities for many years from several of the coastal fields, it was not commercially profitable, and its first major utilization in the area was achieved only through the use of pipe lines to more remote districts. The first city in the area to be assured an adequate supply of natural gas was Beaumont, early in 1925, through the completion by Magnolia of a gas pipe line to Sarepta in Louisiana. This was followed in 1925 by the construction of a gas pipe line to Houston from Live Oak County in Southwest Texas by Houston Pipe Line, and at about the same time by the construction of the Houston Gulf Gas Company (now the United) line from White Point and Refugio to Houston. A total of approximately $21,500,000 was expended for gas pipe line construction in South and Southwest Texas between the spring of 1924 and the spring of 1926. The greater portion of this amount was for the purpose of transporting gas to such industrial centers as Houston, Beaumont, and Port Arthur.

The extension and enlargement in recent years of the area served by these lines, and the construction of other lines, now assures an ample supply of gas to domestic and industrial consumers throughout the length and breadth of the Texas Gulf Coast. Credit should be given, however, to the pioneering companies who, through the expenditure of millions of dollars, not only transported natural gas into the coastal area several years prior to its appreciable production here, but also assured an unlimited future supply of this important fuel through their policy of not depending upon any one field as a perpetual reserve. Gas, unlike oil, cannot be economically and satisfactorily stored adjacent to its consuming market after being transported from the field in which it is produced. It is therefore of paramount importance that consumers, domestic and industrial, be assured that their fuel supply will not be discontinued through the complete depletion of an individual field or a break in the main transmission line.

The supply heretofore secured from other districts now has been materially augmented by the discovery of appreciable reserves of gas at Amelia, Clinton, Conroe, Dickinson, Eureka, Gillock, Katy, Nome, Pledger, Raccoon Bend, Silsbee, Tomball, and many other fields. No accurate data are available as to the total gas reserves existing in the Texas Gulf Coast, but they are known to be of great magnitude. The total annual production and daily open-flow capacity of the wells in this district is now exceeded within the state of Texas only by the Panhandle district and by the Southwest Texas district, which embraces the entire area from Matagorda and Colorado counties to the Rio Grande. An indication of the steadily growing importance of the area as a gas producing region is given by the accompanying summary of reported production of gas by individual counties for the past 10 years. This summary (Table 1) shows, in millions of cubic feet, the reported yearly production and the open-flow daily capacity for the district at the end of the year.

Data contained in this article were compiled from reports of the United States Geological Survey and the Railroad Commission of Texas, and supplemented by private reports and individual information.

TABLE 1
Total Annual Natural Gas Production of Texas Gulf Coast
(In Millions of Cubic Feet)

COUNTY	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Austin	.....	812	562	380	303	221	223	609	816	634
Brazoria	.....	.....	.....	.....	133	231	231	2,106	10,894	11,041
Chambers	.....	8	.....	.....	.....	.....	.....	98	79	712
Fort Bend	25	945	168	50	.....	.....	26	11	.....	.....
Galveston	.....	.....	.....	.....	.....	.....	.....	671	1,814	4,985
Hardin	.....	.....	.....	.....	.....	.....	39	58	.....	7
Harris	.....	213	8	.....	.....	50	628	1,106	1,199	6,435
Jefferson	.....	.....	.....	.....	.....	.....	.....	.....	.....	651
Liberty	.....	.....	.....	.....	.....	.....	.....	.....	.....	166
Matagorda	39	.....	.....	.....	.....	.....	.....	.....	144	166
Montgomery	.....	.....	.....	.....	771	788	53	152	104	272
Newton	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Orange	.....	.....	.....	.....	.....	.....	.....	.....	.....	216
Tyler	.....	.....	.....	.....	.....	23	8	.....	30	17
Waller	.....	.....	.....	.....	.....	.....	.....	.....	.....	77
Washington	.....	85	479	64	28	71	81	68	137	275
Wharton	.....	50	.....	.....	.....	.....	295	216	204	1,824
Total	64	2,113	1,217	494	1,235	1,384	1,584	5,095	15,421	27,480
Daily Open Flow	10	115	95	77	218	365	392	997	3,157	4,126

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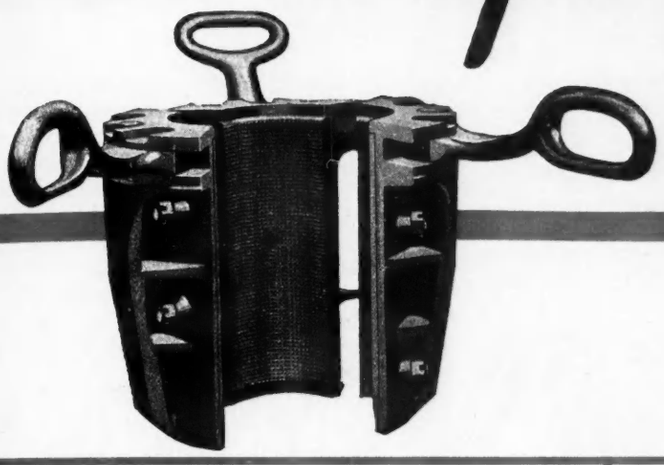

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GEOLOGIC STUDY PROVES THE EXISTENCE OF FIVE

Heaving Shale Trends On Texas Gulf Coast

In reviewing the problem of heaving shale on the Gulf Coast, it has been found that at least one of the many ramifications of the problem has been practically untouched, namely, the geologic phase. The results of the work done on this phase are not entirely satisfactory, and, undoubtedly, the conceptions will change as new ideas are developed in the future. After a thorough search of many files, data were compiled on all wells reporting heaving shale before March 1, 1938, so that a study could be made. The accompanying article, which is a revision of a paper delivered by the author at the American Association of Petroleum Geologists' meeting in New Orleans on March 17, 1938, is a report of that study.

By J. M. FROST III
Department of Geology,
University of Texas

AFTER studying many wells that reported heaving shale it has been found that there are seven groups into which all heaving shale wells can be divided, namely: those heaving in the Miocene, the Oligocene, the Vicksburg, the Frio, the Jackson, the Yegua, and the Claiborne. The above names have been applied because of the various formations in which shales have heaved, and are the names used among petroleum geologists. These terms do not represent comparable stratigraphic units in terminology used, but to geologists and to those familiar with the Gulf Coast they have a rather definite connotation.

Five groups of wells form trends on the Gulf Coast and there is a possibility of two minor trends being formed by the other two groups, the Claiborne and Frio. Because the number of wells reported to have heaved in each of the latter groups was so small, because it was questionable as to whether these formations actually heaved, and because the evidence was so fragmentary when compared with that upon which the five major trends were based, it seemed most logical to discount the evidence concerning the minor groups. Table 1 indicates all the places where heaving shale of the five major trends occurred. In collecting data on heaving shale wells, one of the greatest difficulties encountered was that the ideas as to which wells should be classified as heaving shale wells were changing constantly. Other hindrances in a study of heaving shale wells were as follows: A study of one well revealed much information whereas another well did not although the wells were so close that a perceptible variation was impossible. It was necessary to consider the date on which a well was drilled because of the improved methods of drilling and improved equipment; wells have been drilled through shales in

TABLE I

Fields in Which Heaving Shale Has Been Found in Texas Coast

Miocene	Oligocene	Vicksburg	Jackson	Yegua
Big Hill (Mat. Co.)	Seadrift	Coletto Cr. ?	Nursery	Wedemier Well
Allen	Citrus Grove	Leach	Telfener	McCormick Well
Damon Mound	Shepherd Mott	Blue Basin	Coletto Cr.	Junker Well
West Columbia	Hawkinsville	Markham	Edna	Wilson Well
Bryan Heights	Boling	Needville	Leach	Leach
Green Lake	Big Creek	Big Creek	Markham	Hull
High Island	Nash	Damon Mound	Orchard	Batson
Jefferson Coast	Stratton Ridge	West Columbia	Damon Mound	Call
Fannette ?	Peach Pt.	Blue Ridge	Blue Ridge	Grisby
	Rattlesnake	Lockridge	Humble	South Liberty
	Hitchcock	Mykawa	Ariola	Sour Lake
	High Island	Goose Creek	Sarah Gray	
	Jefferson Coast	Moss Bluff	Gist	
	Big Hill (Jeff. Co.)	South Liberty	Nome	
	Fannette	Sea Breeze	Double Gum	
	Spindle Top	Double Gum		
	Orange	Nome		
	North Dayton ?	Sour Lake		
		Fannette		
		Cheek		
		Spindle Top		
		Port Neches		
		Orange		

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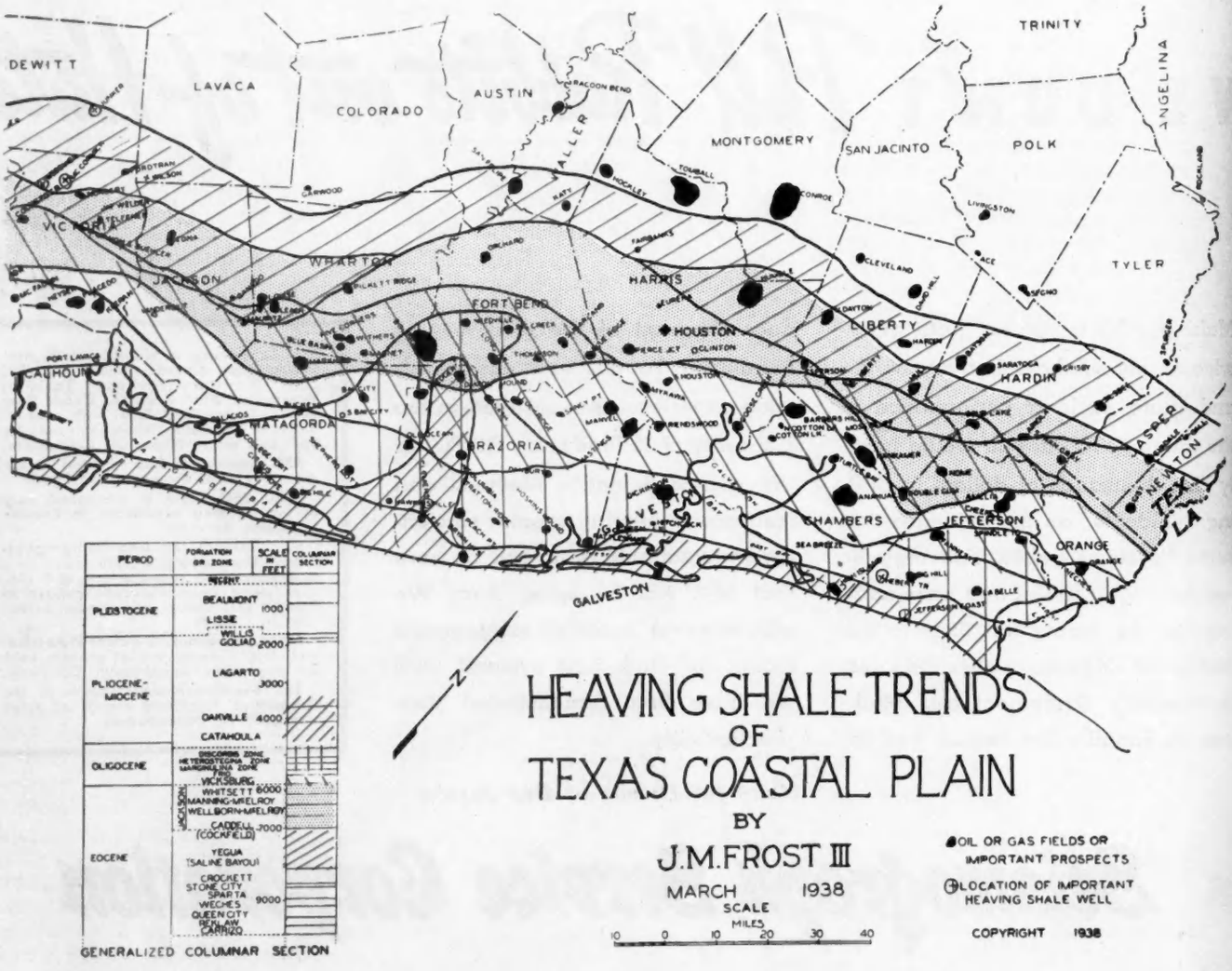
some areas where wells had been abandoned in previous attempts. It was found that various companies do not draw a distinction between heaving shale and caving shale because this distinction would be based more or less on personal interpretation. In the work of certain companies, if a formation could be drilled through finally it was not reported as heaving shale, but if the company was forced to stop drilling operations because of shale heaving in the hole, it was reported that the hole was abandoned due to heaving shale.

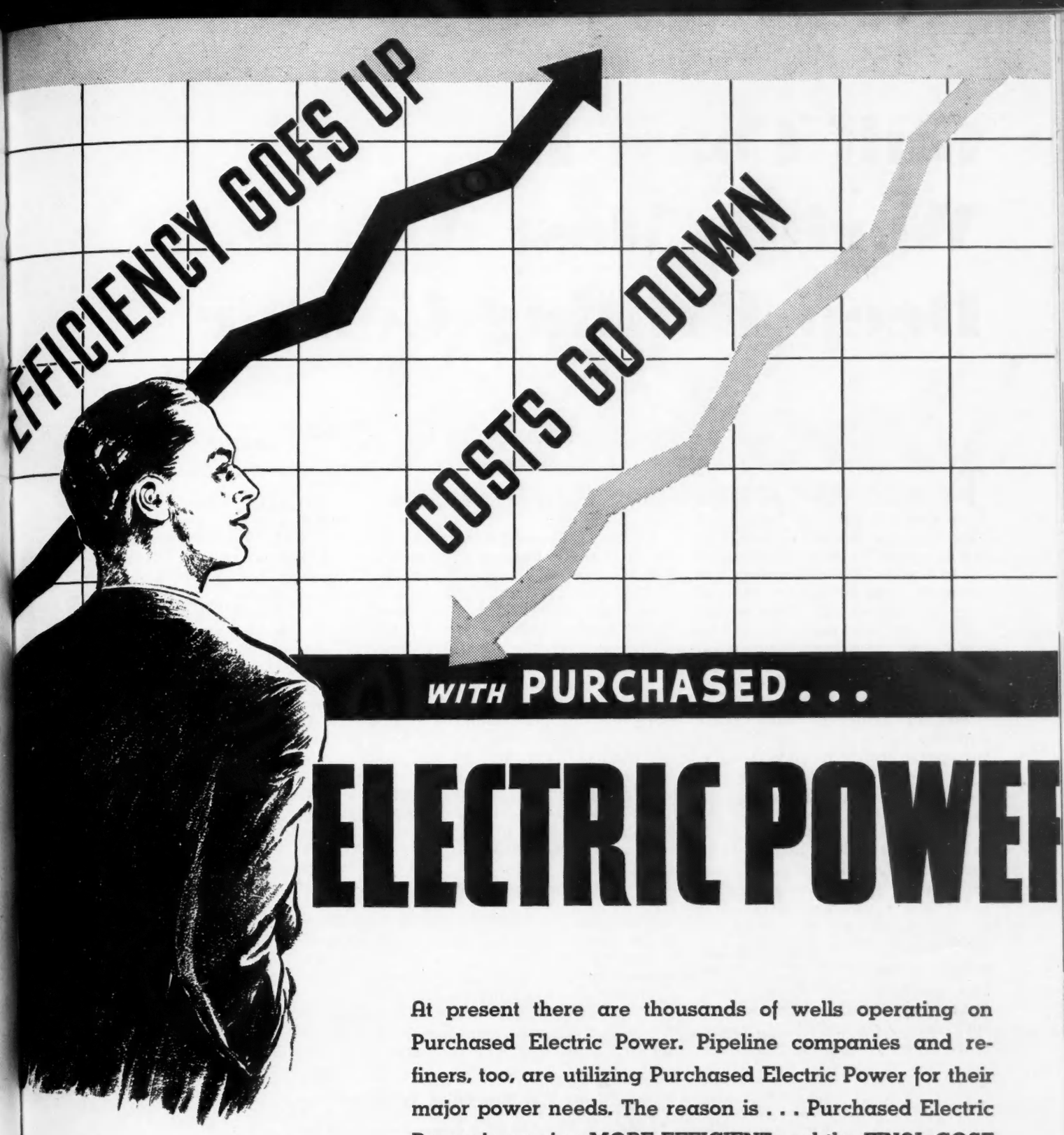
Considering the many viewpoints and the difficulties that are present the writer has prepared the accompanying map on which he has shown the heaving shale trends present on the Gulf Coast of Texas.

The trends that have been found, are all approximately the same width, are all parallel to the present shore line of the Gulf of Mexico, and extend completely across the Gulf Coast. The above trends were determined after each field given in Table 1 had been plotted on a map. The limits of each trend was determined by drawing lines so as to include all places where that particular type of heaving shale occurred. In doing this the limits overlap, but in several cases more than one type of heaving shale has occurred in a well. The limits of the trends have included fields where no heaving shale has occurred, nevertheless they are in the trend in which a certain formation is likely to heave. In determining the five major trends in which heaving shale of the various ages is found, the up-dip limit of each trend was drawn with a fair degree of certainty, but the down-dip limit of each trend was more difficult to define because the knowledge of the down-dip limits is restricted by the present depths of drilling. However, more wells are being drilled to greater depths and thus information is becoming less fragmentary so that any down-dip limit drawn according to the data now available will be modified so as to move southward.

It is possible from a map such as presented in this article to make prophecies with respect to the possibility of encountering heaving shale in any area in the Gulf Coast in which there is an interest. This map is not only helpful in considering whether heaving shale is likely to occur, but, also, what formation is likely to heave in an area.

The writer sincerely appreciates the whole-hearted cooperation which he has received from the various oil companies and from the many men in the petroleum industry who so generously offered their help in this study. Especially is the writer indebted to Dr. R. H. Cuyler, A. K. Tyson, Earl S. Post, and Charles Leyendecker.





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Gulf Coast Is World's Most Active Deep Drilling Center

By CHARLES B. LEYENDECKER, Staff Writer

THE deep drilling trend in the Gulf Coast region of Texas and Louisiana continues its march forward, expanding more rapidly than in any other area. Thereby, this territory remains the outstanding deep drilling sector of the world. That is to say, more 10,000-foot and deeper tests have been drilled here than in any other area. True, there are other districts in which deep tests are being drilled, but none are achieving such great depths with the consistency featuring operations in the Gulf Coast.

Nearly 100 Tests

A total of 91 tests have been drilled or are drilling at present in the Texas-Louisiana Gulf Coast. More than half of this number have been active during the first six months of 1938. At the end of 1937 there were 41 wells that had drilled below 10,000 feet in Texas and Louisiana Gulf Coast, while the first six months of 1938 saw 43 such deep tests drilled. Moreover, there were seven other tests actively drilling below 10,000 feet on July 1.

South Louisiana has accounted for 31 of the 10,000-foot tests completed prior to 1938, and for 30 during the first half of the year. The Texas Gulf Coast had 10 completed 10,000-foot tests at the first of the year, and since that time has finished 13 others.

Five years ago, 7000 to 9000-foot production was considered deep, but today the completion of wells at that depth is looked upon as being shallow. The first 10,000-foot well in the Louisiana Gulf Coast was completed in January, 1935. The Texas sector of the coastal belt did not get its first 10,000-foot hole until October, 1936.

Production Found

Efforts to establish production below 10,000 feet did not prove successful until January, 1937, when The Texas Company completed a test at Lafitte at 10,110 feet for 1636 barrels daily. The Texas Gulf Coast saw its first 10,000-foot producing well in March of that year, when Harrison & Abercrombie completed Bernard River Land 3 at Old Ocean, Brazoria County, at 10,293 feet.

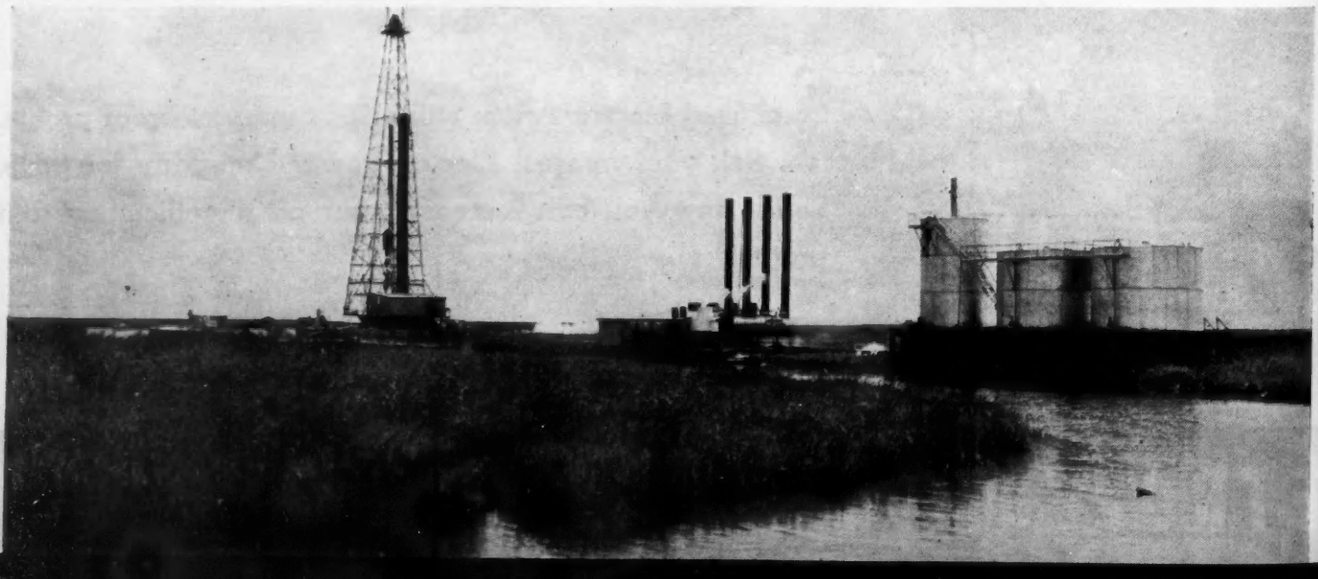
Humble Oil & Refining Company's Ellender 1, at Lirette, Terrebonne Parish, flowed oil from 11,630 feet and was the first well in the world to produce from 11,000 feet. This was during 1937. Due to salt water encroachment, the well was killed and plugged back to 10,500 feet after a short production history.

Following a deep drilling campaign in 1937, several 10,000-foot fields were opened in South Louisiana.

In the latter part of June, 1938, the world's deepest producing well was completed in South Louisiana. This wildcat regained for the area the lost honor of the deepest producing territory. Previously the deepest producing well (in California) was flowing at 13,180 feet. Fohs Oil Company, however, completed Buckley Bourg 1 at West Dulac, Terrebonne Parish, at 13,266 feet.

The following Louisiana fields

Fohs Oil Company's Buckley Bourg 1 at West Dulac, Terrebonne Parish, is the deepest producing well in the world. It is flowing gas and distillate at 13,266 feet. When it was drilled to 13,333 feet it was the third deepest drilled well in the world.



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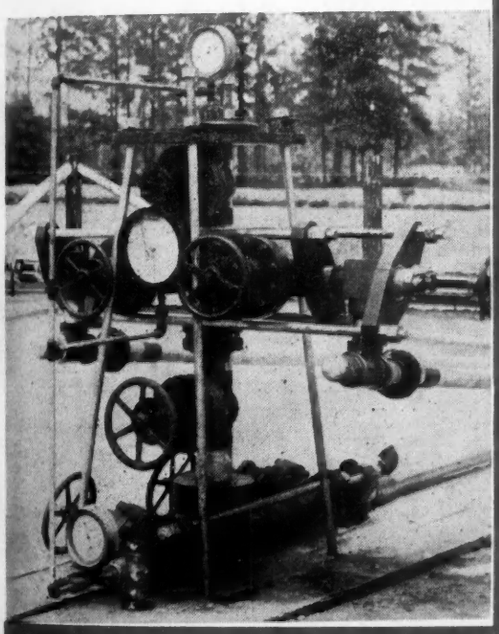

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produce from below 10,000 feet today:

Field—	Depth
West Dulac, Terrebonne Parish	13,266
Bateman Lake, St. Mary Parish	10,905
Horseshoe Bayou, St. Mary Parish	10,900
Lirette, Terrebonne Parish	10,500
Lake Long, Lafourche Parish	10,400
Lafitte, Jefferson Parish	10,266
Raceland, Lafourche Parish	10,200
Jeanerette, St. Mary Parish	10,200

A number of wildcats have indicated they may produce at such great depths, the majority having at least shown gas below the deep mark. In a number of instances deep tests within other proven fields have had excellent shows.

The largest field in South Louisiana is the 10,000-foot Lafitte field, which is expected to ultimately yield over 100,000,000 barrels. It also is the largest field in area of any in South Louisiana.

The Old Ocean field, Brazoria County, is the only Texas Gulf Coast field producing from below 10,000 feet. This field is expected to yield 100,000,000 barrels, and when finally defined is expected to be the second largest in area.

Importance of Reserves

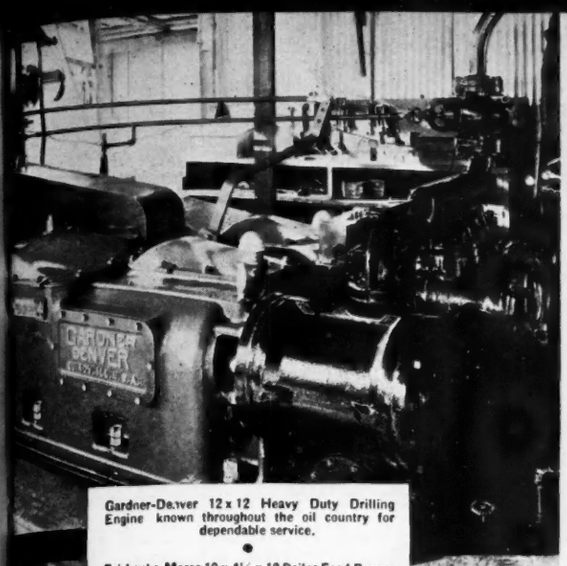
The discovery of production at such great depths is an indication of what may be expected in the future. Without doubt, even deeper drilling offers great possibilities in both Texas and Louisiana, and the United States is assured of the extension of its crude supply thereby. Many old fields will be explored to deeper levels, and it is to be anticipated production will be found in a number of cases. Unfortunately, there is no known means of even hazarding a guess as to how prolific this development will be.

The deepest drilled test in the Gulf Coast is Fohs Oil Company's Bay Baptiste 1, which drilled to 13,409 feet before plugging back. This was but one of three Southern Louisiana wildcats that bored to 13,000 feet during the first half of 1938.

Wells Drilled Below 10,000 Feet in the Gulf Coast

Company and Well	Location	Depth	Date	Casing Program	Records Established and Remarks
Fohs Oil Co.'s State Bay Baptiste 1	Southeast of Lirette, Terrebonne Parish, La.	13,409	July, 1938	13⅜ in. @ 310 ft.; 9⅝ in. @ 9226 ft.; 7 in. @ 12,215 ft.	Second deepest well in world. To test at 11,160 ft. Second 13,000-ft. test for Fohs Oil Co. Third 13,000-ft. well for South Louisiana.
Fohs Oil Co.'s Buckley Bourg 1	West Dulac, Terrebonne Parish, La.	13,333	June, 1938	26 in. @ 60 ft.; 18⅝ in. @ 310 ft.; 13⅜ in. @ 3250 ft.; 7 in. @ 16,640 ft.; 5 in. liner @ 13,333 ft.	Deepest producer in world. Producing from Miocene sands 13,254-266 ft. First 13,000-ft. well for operators. Discovered new field for South Louisiana.
Amerada-Stanolind's Calcasieu National Bank 3-B	South Elton, Jefferson Davis Parish, La.	13,210	May, 1938	9⅝ in. @ 8647 ft.; 7 in. @ 9230 ft.	First well in South Louisiana to drill to 13,000 ft. Topped Cockfield at 12,200 ft. Was later abandoned.
The Texas Co.'s Horseshoe Bayou 1	Wax Lake Prospect, St. Mary Parish, La.	12,261	May, 1937	17⅝ @ 59 ft.; 13⅜ @ 1496 ft.; 7⅝ @ 10,975 ft.	Made 1,152 bbls. 39 gravity oil through perforations 10,863-873 ft. Fifth in world to reach 12,000 ft. Blew out May 20, 1937, burned one hour, then bridged.
Continental Oil Co.'s Hebert 1	Abbeville, Vermilion Parish, La.	12,216	Dec., 1936	18⅝ @ 248 ft.; 13⅜ @ 1882 ft.; 7 @ 10,947 ft.; 5 @ 11,795 ft.	Second 12,000-ft. hole in world. Strong pressure 12,210 ft. Plugged back.
Humble Oil & Refining Co.'s Ellender 1	Houma, Terrebonne Parish, La.	12,165	May, 1937	26 @ 260 ft.; 13⅜ @ 2824 ft.; 9⅝ @ 8735 ft.; 7 @ 12,097 ft.	Was world's deepest producing well. Flowed 1,000 bbls. Choked after plugging back to 11,620 ft. First 11,000-ft. producing well. Seventh to produce oil below 10,000 ft. Fourth well to reach 12,000 ft. Later plugged to 10,500 ft.
Stanolind Oil & Gas Co.'s Stovall 1	South Abbeville, Vermilion Parish, La.	12,128	Jan., 1937	Only surface pipe at 1,980 ft.	Third test to reach 12,000 ft. Record for amount of open hole, having 10,148 ft. uncased.
The Texas Co.'s State Bayou Norman 1	LaFitte field, Jefferson Parish, La.	12,115	Nov., 1937	18⅝ @ 102 ft.; 13⅜ @ 1931 ft.; 7⅝ @ 9674 ft.	Extended LaFitte ¾ mile. Tried to blow out at 12,069 ft. Plugged back, perforated 9530-9630 ft. made 1,736 bbls. daily.
Union Producing Co.'s Unitz	Lirette, Terrebonne Parish, La.	11,924	June, 1938	13⅜ in. @ 2910 ft.; 9⅝ in. @ 5878 ft.	.....
Continental Oil Co.'s Brookshire 1	Abbeville, Vermilion Parish, La.	11,909	Sept., 1937	18⅝ @ 237 ft.; 13⅜ @ 2125 ft.; 7⅝ @ 11,342 ft.	Opened Abbeville field. Blew out at 11,909 ft., made estimated 15,000 bbl. salt water daily. Was plugged back and perforated in new sand at 7884-7890 ft.
The Texas Co.'s State	Bateman Lake, St. Mary Parish, La.	11,879	Dec., 1937	18⅝ @ 60 ft.; 13⅜ @ 1742 ft.; 7⅝ @ 10,515 ft.; 5 @ 11,266 ft.	Discovery well for Bateman Lake. Completed at 10,900 to 10,905 ft.
Horton Oil Co.'s Roane Sugar 1	Jeanerette, St. Mary Parish, La.	11,634	Feb., 1938	18⅝ @ 90 ft.; 13⅜ @ 2157 ft.; 7 @ 9884 ft.	Deepest well for Jeanerette field.
Continental Oil Co.'s Robbins 2	Citrus Grove, Matagorda County, Texas	11,612	May, 1937	20 @ 230 ft.; 16 @ 2665 ft.; 11¾ @ 6420 ft.; 8⅝ @ 8910 ft.	First well in Texas to go below 11,000 ft. and deepest in area. Drilled heaving shale.
Skelly Oil Co.'s Cobb B-14	Van Vleck, Matagorda County, Texas	11,465	Feb., 1938	18 @ 120 ft.; 9 @ 8424 ft.; 7 @ 8167 ft.	Was plugged back and completed at 7496 ft. Deepest well at Van Vleck.
Fohs Oil Co.'s State 3	Lake Long, La Fourche Parish, La.	11,347	Feb., 1938	16 @ 297 ft.; 10¾ @ 2739 ft.; 7 @ 9477 ft.	Deepest well drilled at Lake Long. Completed oil well.
Humble Oil & Refining Co.'s F. Worzlow 1	Lirette, Terrebonne Parish, La.	11,347	Feb., 1938	20 @ 62 ft.; 13⅜ @ 2819 ft.; 9⅝ @ 9019 ft.	Failed to find deep sand. Was abandoned.
Sun Oil Co.	Bay Shore Farms, Matagorda County, Texas	11,327	Jan., 1938	18 @ 110 ft.; 9 @ 8747 ft.; 7 @ 11,327 ft.	Perforated 9245-75 ft. Well blew out, caught fire. Estimated 6,000 bbls. daily. New sand for field. Deepest well in field.
Amerada Petroleum Corp.'s Godchaux 1	Raceland, La Fourche Parish, La.	11,315	July, 1938	18⅝ in. @ 262 ft.; 11¾ in. @ 2667 ft.; 7 in. @ 11,315 ft.	Still drilling. Deepest well at Raceland.
Harrison & Abercrombie's Copland 1	Old Ocean, Brazoria County, Texas	11,130	Jan., 1938	13 @ 1490 ft.; 9 @ 6990 ft.; 7 @ 10,030 ft.; 5 in. liner @ 11,090 ft.	Perforated 10,660-670 ft. Discovered new sand. Deepest producer in Texas.
The Texas Co.'s St. Mary Parish Land Co. 1	Horseshoe Bayou, St. Mary Parish, La.	11,087	May, 1938	18⅝ @ 90 ft.; 13⅜ @ 1983 ft.; 7 @ 11,062 ft.	Oil well in sands 10,891-895 ft.
Continental Oil Co.'s Foreman 1	South of Scott, Lafayette Parish, La.	10,973	May, 1938	13⅜ @ 1511 ft.	No shows reported.
Gulf Oil Corp.'s State QQ4	Quarantine Bay, Plaquemines Parish, La.	10,960	July, 1938	20 in., 99 ft.; 13⅜ in., 1494 ft.; 5 in., 10,950 ft.	Still active. Deepest well at Quarantine Bay. Indicates it will open new sand.

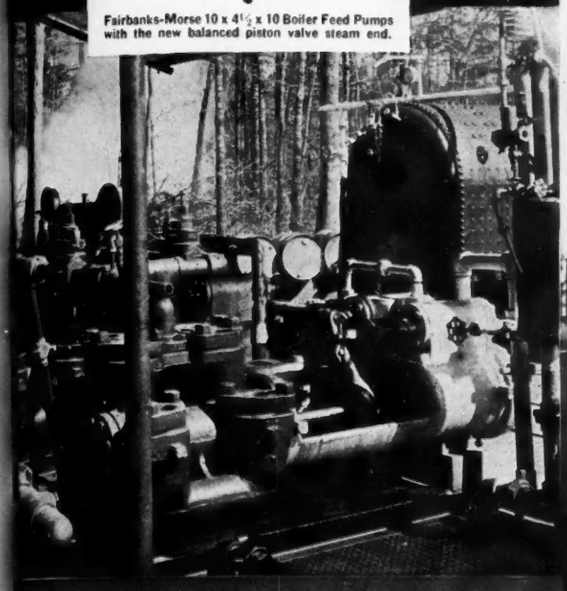
Table continued page 108



Gardner-Denver 12 x 12 Heavy Duty Drilling Engine known throughout the oil country for dependable service.

●

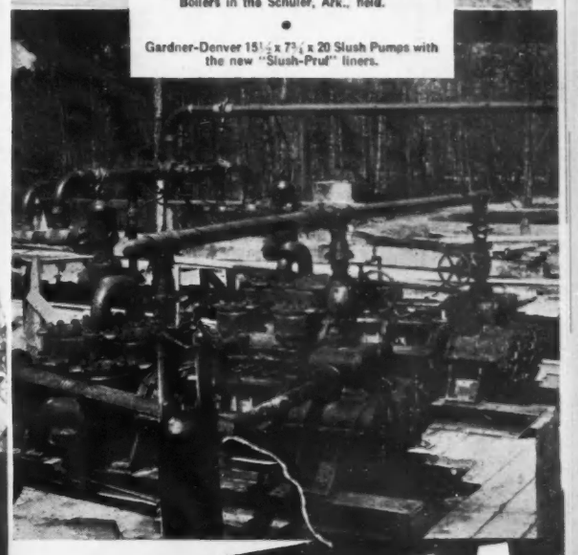
Fairbanks-Morse 10 x 4½ x 10 Boiler Feed Pumps with the new balanced piston valve steam end.



A battery of Farrar & Trefts 125 h.p. 350 lb. W. P. Boilers in the Schuler, Ark., field.

●

Gardner-Denver 15½ x 7½ x 20 Slush Pumps with the new "Slush-Prul" liners.



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Gardner-Denver 8 x 8 Vertical Drilling Engine V-belt connected to G-D 7¼ x 14 Power Pump — an economical and serviceable unit.

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CONTINENTAL

Wells Drilled Below 10,000 Feet in the Gulf Coast—(Continued)

Company and Well	Location	Depth	Date	Casing Program	Records Established and Remarks
The Texas Co.'s State Lake Barre 37	Lake Barre, Terrebonne Parish, La.	10,959	April, 1937	9⅝ @ 8063 ft.	Thirteenth 10,000-ft. test in Louisiana, 31st in world, and sixth for this company.
Continental Oil Co.'s Fay 1	N. W. Lake Arthur prospect, Jefferson Davis Parish, La.	10,935	Jan., 1938	18⅝ @ 183 ft.; 13⅜ @ 1999 ft.	Wildcat blew out at 10,935. Blew for two hours, bridged over. Killed well and abandoned.
The Texas Co.'s Rigoletts 5	LaFitte field, Jefferson Parish, La.	10,942	Jan., 1937	13⅜ @ 1353; 7⅝ @ 10,244 ft	Completed Jan. 7, 1937, for 1,636 bbls.; choked after plugging back to 10,244 ft. Casing perforated 10,030-10,110 ft. First commercial producer in world below 10,000 ft. Spudded May, 1936.
Humble's Miami Corp. 1-B	Catfish Lake, Cameron Parish, La.	10,895	June, 1938	13¾ in. @ 2150 ft.; 9⅝ in., 7398 ft.	Abandoned wildcat.
Harrison & Abercrombie's Fee 2	Old Ocean, Brazoria County, Texas	10,856	Jan., 1938	20 @ 56 ft.; 13 @ 1500 ft.; 9 @ 6998 ft.; 7 @ 10,824	Perforated 10,056-066 ft. and 9990-10,000 ft.; oil well.
Amerada Petroleum Corp.'s S. Coast 2	Raceland, La Fourche Parish, La.	10,795	July, 1938	11¾ @ 2666 ft.; 7 @ 19,524 ft.	Still active.
Barnsdall Oil Co.'s Stark, Dibert and Brown 1	North of Gibson field, Terrebonne Parish, La.	10,777	Nov., 1937	10¾ @ 2475 ft.	Barnsdall Oil Co.'s deepest wildcat in Louisiana.
Harrison & Abercrombie's Bernard 4	Old Ocean field, Brazoria County, Texas	10,775	July, 1937	20 @ 58 ft.; 13 @ 1405 ft.; 7 @ 10,415 ft.	Third 10,000-ft. producer at Old Ocean. Extended field and discovered new sand.
Harrison & Abercrombie's Larson 1	Old Ocean field Brazoria County, Texas	10,751	Sept., 1937	13⅜ @ 1482 ft.; 7 @ 10,751 ft.	Extended field northeast and discovered new sand. Fourth 10,000-ft. producer for field.
Shell Petroleum Corp.'s Jarnigan 1	Roanoke, Jefferson Davis Parish, La.	10,750	Sept., 1935	20 @ 64 ft.; 13⅜ @ 3518 ft.; 9⅝ @ 7476 ft.; 7 @ 9772 ft.	Tried to blow out at 9999½ ft. First 10,000-ft. well for Roanoke and deepest in field.
Shell Petroleum Corp.'s Pelican 1	Gibson field, Terrebonne Parish, La.	10,727	Aug., 1937	16 @ 178 ft.; 10¾ @ 2499 ft.	Nineteenth 10,000-ft. well for Louisiana. Deepest and first 10,000-ft. well for Gibson.
The Texas Co.'s State 9	Four Isle, Terrebonne Parish, La.	10,725	Mar., 1938	13⅜ @ 1477 ft.; 9⅝ @ 6870 ft.	Deepest hole in field. Dry hole.
Harrison & Abercrombie's Smith 1	Old Ocean field, Brazoria County, Texas	10,638	Nov., 1937	20 @ 60 ft.; 9 @ 7060 ft.; 5 @ 10,630 ft.	Fifth 10,000-ft. producer at Old Ocean.
Humble Oil & Refining Co.'s Trahan 1	North Crowley field, Acadia Parish, La.	10,632	May, 1938	16 @ 119 ft.; 10¾ @ 2050 ft.; 7 @ 9771 ft.	Tested new sand for field, drilled deeper, abandoned. Is deepest well in field.
The Texas Co.'s Vermilion Bay 1	Vermilion Bay, Iberia Parish, La.	10,622	Feb., 1937	13⅜ @ 1131	Eleventh 10,000 ft. well in Louisiana.
Stanolind et al's Freeman 1	Katy gas field, Waller County, Tex.	10,620	June, 1938	18⅝ @ 130 ft.; 13⅜ @ 2518 ft.	Topped Wilcox 10,025 ft. Still drilling.
Herton Oil Co.'s Roanes Sugar 1-A	Jeanerette, St. Mary Parish, La.	10,603	July, 1938	13⅜ @ 2265 ft.; 7 @ 10,404 ft.	Still active. Fishing.
Humble Oil & Refining Co.'s Thomas 1	Roanoke, Jefferson Davis Parish, La.	10,583	Sept., 1935	16 @ 186 ft.; 10¾ @ 2857 ft.; 7 @ 9619 ft.	Located but one mile from Shell's Jarnigan 1, which was first time two 10,000-ft. tests were drilling simultaneously so close together.
Superior Oil Prod. Co.'s Butler 1	Bammel Prospect, Harris County, Tex.	10,519	Aug., 1937	13⅜ @ 1400 ft.; 7 @ 9898 ft.	Seventh 10,000-ft. well for Texas.
Shell Petroleum Corp.'s Barbouri	Glenwild Prospect, St. Mary Parish, La.	10,517	Jan., 1938	9⅝ @ 1935 ft.	Show gas 10,088 ft.; abandoned.
Continental Oil Co.'s Vidrine 1	Villa Platte, Evangeline Parish, La.	10,506	July, 1938	10¾ @ 1487 ft.; 7 @ 9017 ft.	Still active. Deepest well in field.
United North and South Development Co.'s Lambert 1	Wilson Creek, Matagorda County, Texas	10,503	Mar., 1938	7⅝ @ 8660 ft.	Work over. Tested sand at 10,000 ft. Later abandoned.
Hamman Exploration Co.'s Crooker 1	S. Bay City, Matagorda County, Texas	10,497	June, 1937	5½ @ 10,497 ft.	Work over. Was drilled deeper and cored several hundred feet of sand.
Herton Oil Co.'s Carter 2	Jeanerette, St. Mary Parish, La.	10,482	April, 1938	7 @ 9937 ft.	Oil well.
Herton Oil Co.'s Banta and Roanes 1	Jeanerette field, St. Mary Parish, La.	10,480	Oct., 1937	13⅜ @ 1400 ft.; 7 @ 9768 ft.; 5 @ 10,480 ft.	Discovered new sand, first 10,000-ft. producer for Jeanerette, deepest hole and 23rd 10,000-ft. well in South Louisiana.
Fohs Oil Co.'s State 4	Lake Long, La Fourche Parish, La.	10,478	June, 1938	10¾ @ 2707 ft.; 7 @ 10,239 ft.; 5 in. liner to 10,472 ft.	Opened new sand for field.
Shell Petroleum Co 's Stewart 1	Hitchcock Prospect, Galveston County, Texas	10,460	Oct., 1936	13⅜ @ 2473 ft.; 9⅝ @ 7707 ft.	Texas Gulf Coast first test to reach 10,000 ft.
Harrison & Abercrombie's Augsburger 1	Old Ocean, Brazoria County, Texas	10,438	June, 1938	13⅜ @ 1492 ft.; 9⅝ @ 7004 ft.; 7 @ 10,475 ft.	Oil well.
Harrison & Abercrombie's Bernard River 3	Old Ocean field, Brazoria County, Texas	10,437	Mar., 1937	10 @ 40; 13 @ 268 ft.; 9 @ 6070 ft.; 7 @ 10,004 ft.	First 10,000-ft. producer in Texas, fourth in world. Producing from 10,293 ft. Second Texas Gulf Coast to reach 10,000 ft. and 32nd in world. Flowing pressure of 3900 lbs.
Superior Oil Co.'s Larcades	Bosco, Acadia Parish, La.	10,432	Feb., 1938	Set 1941 ft. of 7 in. blank onto 9⅝ @ 9527 ft.	Work over, plugged back and completed at 8075 ft.
Harrison & Abercrombie's Osborne 1	Old Ocean, Texas	10,413	Mar., 1938	9 @ 7000 ft.; 7 @ 10,413 ft.	Oil well.
The Texas Co.'s Rigoletts 7	LaFitte field Jefferson Parish, La.	10,406	July, 1937	13⅜ @ 1935 ft.; 7⅝ @ 10,406 ft.	Extended LaFitte field southeast. Initial production 1,382 bbls. daily.
Harrison & Abercrombie's Bernard 5	Old Ocean, Brazoria County, Texas	10,401	Mar., 1938	13 @ 1500 ft.; 9 @ 7000 ft.; 7 @ 10,401 ft.	Completed and producing.
The Texas Co.'s LaFitte 6	LaFitte field, Jefferson Parish, La.	10,368	May, 1937	13⅜ @ 1988 ft.; 7⅝ @ 10,204 ft.	Initialed 1,050 bbls. choked at 10,018 ft. Made third 10,000-ft. producer for LaFitte; more than any other field. Also, sixth commercial producer from below 10,000 ft. in world.

Table continued page 110

Fig. 1

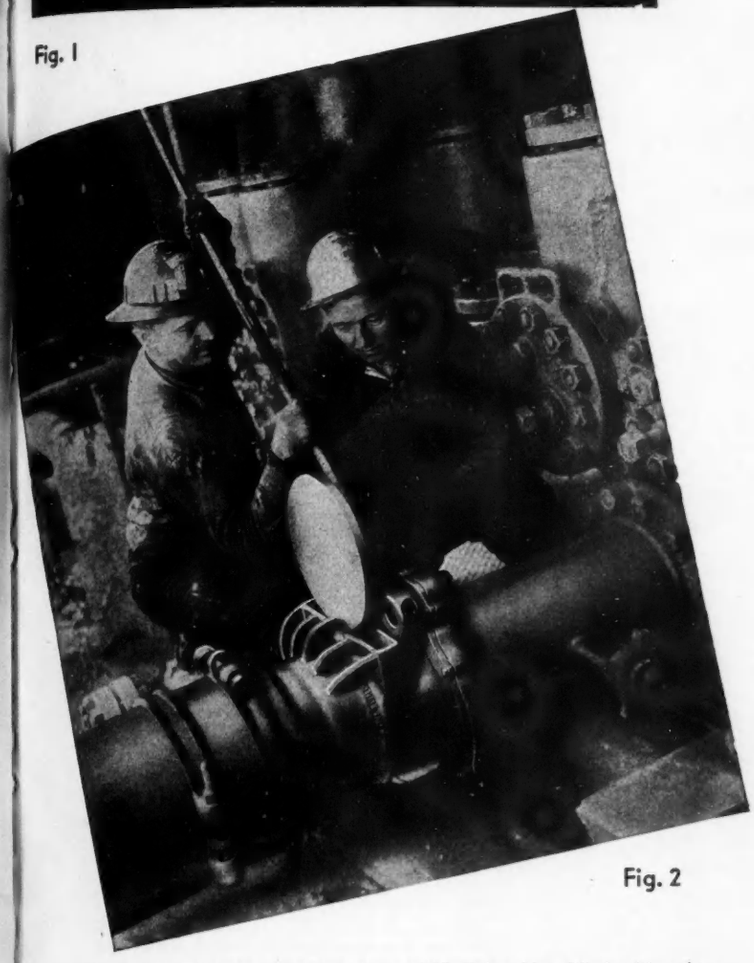

Fig. 2

Fig. 1. One man can change a Hamer 10" Union Line Blind with only a small bar. Note compactness and lightness of this sturdy device. Fig. 2 Hamer 10" Union Line Blind with welded ends assembled in a slush pump suction, used for obtaining a quick, positive shut-off so that pump may receive its intake supply under pressure from another pump; known as compounding the pump.

A New, Positive Shut-off that Works With Speed and Safety

HAMER UNION LINE BLINDS

Hamer Union Line Blinds are the answer to many an oil man's most difficult problem—providing a new, positive shut-off that is exceptionally efficient and eliminates the tremendous losses of time encountered with the usual methods. They also eliminate the excessive drainage of lines, with consequent fire hazards; and the exhorbitant cost of changing plates.

Hamer Blinds assure safety, speed, convenience and economy. They are so simple to operate that one man can reverse the plate in less than one minute with nothing more than a short bar. (See Fig. 1.) They cannot sand up as the opening through the blind is at all times a full hole or a positive shut-off blank, and does not have exposed grooves to become clogged. Leaks are unknown, as the packing is arranged to take an extreme mash-tight position as well as a pressure-seal tightness. Fluids cannot enter the gear and operating parts enclosed in the case. Operators who have tested these blinds have standardized on their use at once.

Made of all steel parts and practically everlasting. Much lighter than gate valves of corresponding size, and much more economical. Tested and proved by months of service on butane, gasoline, pressure distillate, kerosene, fuel oil, rotary mud, water, and other services up to temperatures of 250° F. Cold water pressure tested to 2,000-lbs., and recommended for use on working pressures from 1,200-lbs. down to nothing. Illustrated, descriptive bulletin sent on request.

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Hamer Union Line Blinds shown here are 10", 8", 6", 4" and 3" sizes; made completely of steel, and cold water pressure tested to 2,000 lbs.

Wells Drilled Below 10,000 Feet in the Gulf Coast—(Continued)

Company and Well	Location	Depth	Date	Casing Program	Records Established and Remarks
Superior Oil Prod. Co.'s Duplantier 1	Baton Rouge, E. Baton Rouge Parish, La.	10,360	Oct., 1935	13⅜ @ 1443 ft.; 9⅝ @ 7744 ft.	First deep wildcat for University field.
Pan-American Prod. Co.'s Ecuer 1	Charenton, St. Mary Parish, La.	10,317	Feb., 1938	16 @ 166 ft.; 7 @ 2618 ft.	Discovered new sand at 2621-40 ft.
Amerada-LLE'S South Coast 1	Raceland, La Fourche Parish, La.	10,314	Jan., 1938	20 @ 221 ft.; 13⅜ @ 2623 ft.; 9⅝ @ 7636 ft.; 7 @ 9005 ft.; 5 @ 10,262 ft.	Discovery well.
The Texas Co.'s Rigoletts 8	LaFitte field, Jefferson Davis Parish, La.	10,285	Jan., 1938	18⅝ @ 98 ft.; 13⅜ @ 1923 ft.; 9⅝ @ 10,285 ft.	Oil Well
The Texas Co.'s LaFitte 7	LaFitte field, Jefferson Parish, La.	10,275	Nov., 1937	18⅝ @ 101 ft.; 13⅜ @ 2023 ft.; 9⅝ @ 10,275 ft.	Ninth 10,000-ft. producer for field. Was perforated at 10,065-092 ft.
The Texas Co.'s Marrero 1	LaFitte field, Jefferson Davis Parish, La.	10,275	Feb., 1938	13⅜ @ 1923 ft.; 7 @ 9731 ft.	Northeast extension oil well.
Humble Oil & Refining Co.'s Server 1	South Crowley Prospect, Acadia Parish, La.	10,272	Dec., 1937	20 @ 151 ft.; 13⅜ @ 2086 ft.; 9⅝ @ 7550 ft.	Abandoned.
Gulf's State RR3	Lake Borgne area, St. Bernard Parish, La.	10,270	June, 1938	13⅜ @ 1562 ft.; 9⅝ @ 6486 ft.	Still active.
The Texas Co.'s Madison Realty Co. 1-B	LaFitte, Jefferson Parish, La.	10,266	May, 1938	13⅜ @ 1248 ft.; 7⅝ @ 12,206 ft.	Oil well.
Harrison & Abercrombie's Kauffman 1	Old Ocean, Brazoria County, Texas	10,262	June, 1938	13⅜ @ 1500 ft.; 9 @ 5800 ft.; 7 @ 10,229 ft.	Testing.
Humble Oil & Refining Co.'s Continental Fur 1	Castell, Terrebonne Parish, La.	10,254	Sept., 1936	13⅜ @ 3004 ft.	Third 10,000-ft. test drilled by this concern. Seventh 10,000-ft. hole or deeper for Louisiana.
Humble Oil & Refining Co.'s Boyd & Finch 1	S. Crowley, Acadia Parish, La.	10,222	April, 1938	13⅜ @ 2191 ft.; 9⅝ @ 7474 ft.	Discovery well.
The Texas Co.'s Rigoletts 9	LaFitte field, Jefferson Parish, La.	10,214	June, 1938	18⅝ @ 100 ft.; 13⅜ @ 1950 ft.; 7⅝ @ 10,131 ft.	Oil well.
The Texas Co.'s LaFitte 10	LaFitte field, Jefferson Parish, La.	10,191	May, 1938	18⅝ @ 90 ft.; 13⅜ @ 1736 ft.; 7 @ 10,191 ft.	Oil well.
The Texas Co.'s Marrero 2	LaFitte field, Jefferson Davis Parish, La.	10,187	Mar., 1938	18⅝ @ 95 ft.; 13⅜ @ 1937 ft.; 7⅝ @ 10,159 ft.	Oil well.
Humble Oil & Refining Co.'s Miami Corp. 1	Catfish Lake Prospect, Cameron Parish, La.	10,177	Jan., 1938	20 @ 211 ft.; 13⅜ @ 2936 ft.; 9⅝ @ 7100 ft.	Dry hole.
Sun Oil Co.'s Robbins 1	Simpsonville, Matagorda County, Texas	10,160	June, 1938	18⅝ @ 150 ft.; 7 @ 10,154 ft.	Abandoned wildcat.
Shell Petroleum Corp.'s Realty 1	Houma, Terrebonne Parish, La.	10,157	Mar., 1936	20 @ 72 ft.; 13⅜ @ 2486 ft.	Shell's second 10,000-ft. well in South Louisiana.
Sun Oil Co.'s Ward 1	Labelle field Jefferson County, Texas	10,147	Dec., 1937	13 @ 1254 ft.; 7 @ 9951 ft.	Dry hole. Deepest in field.
Pure Oil Co.'s Mallard Bay 1	Cameron Parish, La.	10,146	Mar., 1937	18⅝ @ 1499 ft.; 13⅜ @ 4604 ft.; 9⅝ @ 7906 ft.	Showed little oil at 5925 ft. Fourteenth 10,000-ft. well in South Louisiana.
Harrison & Abercrombie's Troyer 1	Old Ocean, Brazoria County, Texas.	10,133	June, 1938	13⅞ @ 1400 ft.; 9 @ 6000 ft.; 7 @ 10,127 ft.	Oil well.
The Texas Co.'s Madison Realty Co. 2	LaFitte field, La.	10,120	Oct., 1937	20 @ 107 ft.; 13⅜ @ 1861 ft.; 7⅝ @ 10,120 ft.	Extended field 1800 ft. north.
The Texas Co.'s LaFitte 4	LaFitte field, La.	10,092	July, 1937	13⅜ @ 1962 ft.; 7⅝ @ 9363 ft.; 5¾ @ 10,092 ft.	Was completed at 9420 ft.; was killed and drilled deeper to 10,092 ft.
Gulf Oil Corp.'s Moore 53	Orchard field, Ft. Bend County, Texas	10,085	Jan., 1938	10 @ 1321 ft.; 5 @ 9460 ft.	Deepest dry hole in field.
Beaty, Bowles & Borsodie's Truska 1	Algoa, Brazoria County, Texas	10,083	Mar., 1937	18⅝ @ 640 ft.; 9 @ 6430 ft.	Thirty-third test to go below 10,000 ft. in world, third in Texas Gulf Coast, eighth in Texas.
Gulf Oil Corp.'s Kirby C-21	Cleveland, Liberty County, Texas.	10,075	June, 1938	13 @ 1486; 5 @ 9347 ft.	Opened new Wilcox production at Cleveland.
Pan-American Prod. Co.'s Lawes 4	Charenton field, St. Mary Parish, La.	10,066	Sept., 1937	16 @ 150 ft.; 10¾ @ 1900 ft.; 7 @ 8586 ft.	Pan American Prod. Co.'s first 10,000-ft. well, first and deepest for Charenton field, 23rd for South Louisiana.
The Texas Co.'s LaFitte 9	LaFitte field, Jefferson Davis Parish, La.	10,065	Feb., 1938	13⅜ @ 1844 ft.; 7 @ 10,035 ft.	Oil well.
Harrison & Abercrombie's Bernard 1-A	Old Ocean field, Brazoria County, Texas	10,058	June, 1937	10 @ 1358 ft.; 7 @ 8636 ft.; 5 @ 9845 ft.	The discovery well was completed at 8651 ft., was killed and drilled below 10,000 ft.
The Texas Co.'s LaFitte 5	LaFitte field, St. Mary Parish, La.	10,057	Sept., 1937	13⅜ @ 1913 ft.; 7⅝ @ 9920 ft.; 5¾ @ 10,057 ft.	Was completed in Sept., 1936, started making salt water, was killed and drilled to 10,057 ft., Sept., 1937.
Humble Oil & Refining Co.'s Nordyke 1	S. Crowley area, Acadia Parish, La.	10,056	April, 1937	20 @ 152 ft.; 13⅜ @ 2130 ft.; 9⅝ @ 6850 ft.	Failure.
The Texas Co.'s R. C. Milling 1	LaFitte field, Jefferson Parish, La.	10,040	Jan., 1937	13⅜ @ 1937 ft.; 7⅝ @ 10,040 ft.	Completed Jan. 13, 1937, for 1,550 bbls. choked. Second 10,000-ft. commercial well in world and second at LaFitte.
Humble Oil & Refining Co.'s Habetz 1	N. Crowley field, Acadia Parish, La.	10,040	Jan., 1938	16 @ 255 ft.; 10¾ @ 2196 ft.	Dry hole.
Superior Oil Prod. Co.'s Martinez 1	Bosco field, St. Landry Parish, La.	10,002	Jan., 1935	13⅜ @ 226 ft.; 7 @ 9325 ft.	First 10,000-ft. test in Louisiana.
Shell & Tide Water's Adams 1	West Lake Verrett Prospect, St. Martin Parish, La.	10,000	April, 1938	.....	Dry hole.

TO FIND OUT WHAT

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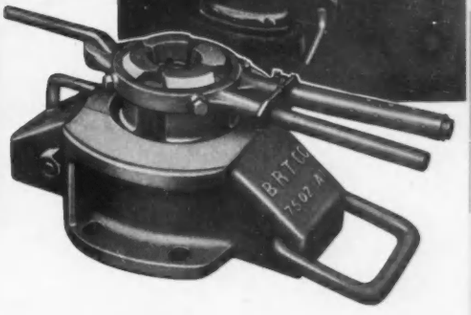

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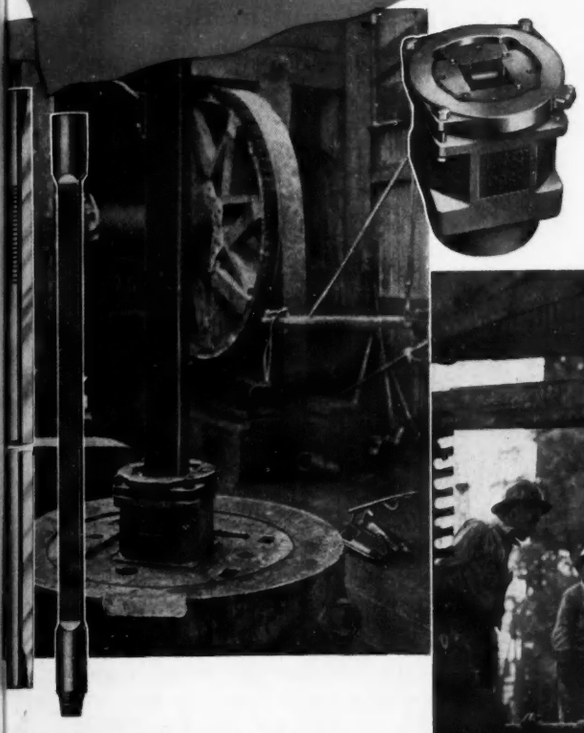

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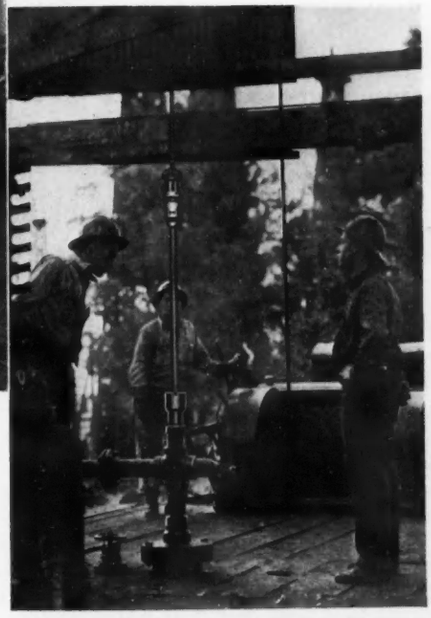

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Geophysical Work Maintains Important Coastal Standing

Greater reliance placed on geophysical science as many advancements in equipment and methods enhance possibilities of outlining structures.

By KURT W. STEINMANN, Staff Writer

In the past decade geophysics have gained tremendous importance in the search for new oil bearing structures, and this is particularly true of the Texas-Louisiana Gulf Coast. Great strides have been made in the advancement of the science, and it is possible to outline structures today that could not be located a few years ago. That additional improvement is to be expected is indicated by the present widespread effort to improve existing methods and to develop new instruments for more accurately and economically doing this type of work.

Much Money Spent

Geophysical expenditures in the Gulf Coast have increased considerably from year to year as it became more popular. Although impossible to obtain accurate figures as to how much money is being spent for geophysical exploration in the Texas-Louisiana Coastal Belt, a rough estimate is that $500,000 was spent during one month of 1938. Additional ideas of the importance of the work may be gleaned from estimates that 800 men are engaged in actual field work in this territory, while the office personnel in geophysical departments totals more than 200. To quote an example, one major company operating torsion balances, several seismic units and one gravity meter crew, spent $65,000 for field work in one month.

To this cost, salaries of the office personnel in the amount of approximately $2500 and miscellaneous expenses amounting to several hundred dollars will have to be added.

These figures naturally do not contain parts of the huge sum which is being spent monthly by the research laboratories of major oil companies and contracting firms for experiments with new inventions and improvements of existing methods. Great strides in this direction have been made by such companies, and depending on the nature of the research work, whether it involves developments of entirely new equipment, or improvements of already established methods, it is assumed that approximately $600,000 is spent annually, a part of which naturally must be charged to geophysical work undertaken in the Gulf Coast region. This figure would primarily include the employment of high paid physicists, skilled mechanics, machinery for the testing and manufacturing of suitable material to be incorporated in the new instruments, and the general overhead expense of the research laboratory or shop. Under ordinary circumstances it requires at least several years to develop a new method to a stage where actual field work can be undertaken. In case the new method proves more accurate, flexible and economical than previous methods, the time and money has been well spent. But, as it has occurred on many occasions, some new principles seeming to have theoretically good merits, however, failed to show suitability in actual tests under severe field conditions. In the latter case, except for the experience gained, no actual return for the company involved can be expected. In the future the steady rise in expenditures for this type of work will continue, as the industry will try to keep step with the remarkable progress that has been made in other departments.

The cost per acre of geophysical work in the Texas and Louisiana Gulf Coast varies from approximately 4 cents to $2, depending entirely on the nature of the survey, methods used and the different purposes requiring different spacings. The speed of coverage likewise depends solely on the type of survey, field conditions and instruments used. Time ordinarily is of paramount importance, in particular when the purpose of the

geophysical survey is to guide leasing operations in a highly competitive campaign. Consequently most suitable methods are chosen to obtain the desired data as quickly as practically possible. Very small expenditures are made for leasing acreage before geophysical work is started in an undeveloped area.

Geophysical work in the Louisiana Gulf Coast has increased slightly during 1938, while activities in the coastal area of Texas somewhat declined. Total number of geophysical crews operating in coastal Louisiana during one week in June, 1938, were 61, of which 44 represented seismic reflection units, 10 torsion balance parties, 4 gravity meter crews and 3 miscellaneous methods. This total figure of 61 compares with 54 different types of geophysical crews which operated during the week ending March 31, 1938. Geophysical activities in the coastal region of Texas were limited to 27 weekly crews, as of June 30, 1938, while 35 units operated during the week of January 1 this year. Of the 27 parties out in the field during the period ending June 30, 21 were units of the seismic reflection type, 3 torsion balance crews, 2 gravity meter parties and 1 miscellaneous method. Comparative figures with last year's activities during the

Geophysical methods most commonly used in the Gulf Coast are the seismic reflection type, the magnetometer, torsion balance and the gravity meter. On the top row from left to right is shown: firing a shot for seismic reflection data; reading the magnetometer; and moving an inclined beam torsion balance. Below: a gravity meter ready for operation.

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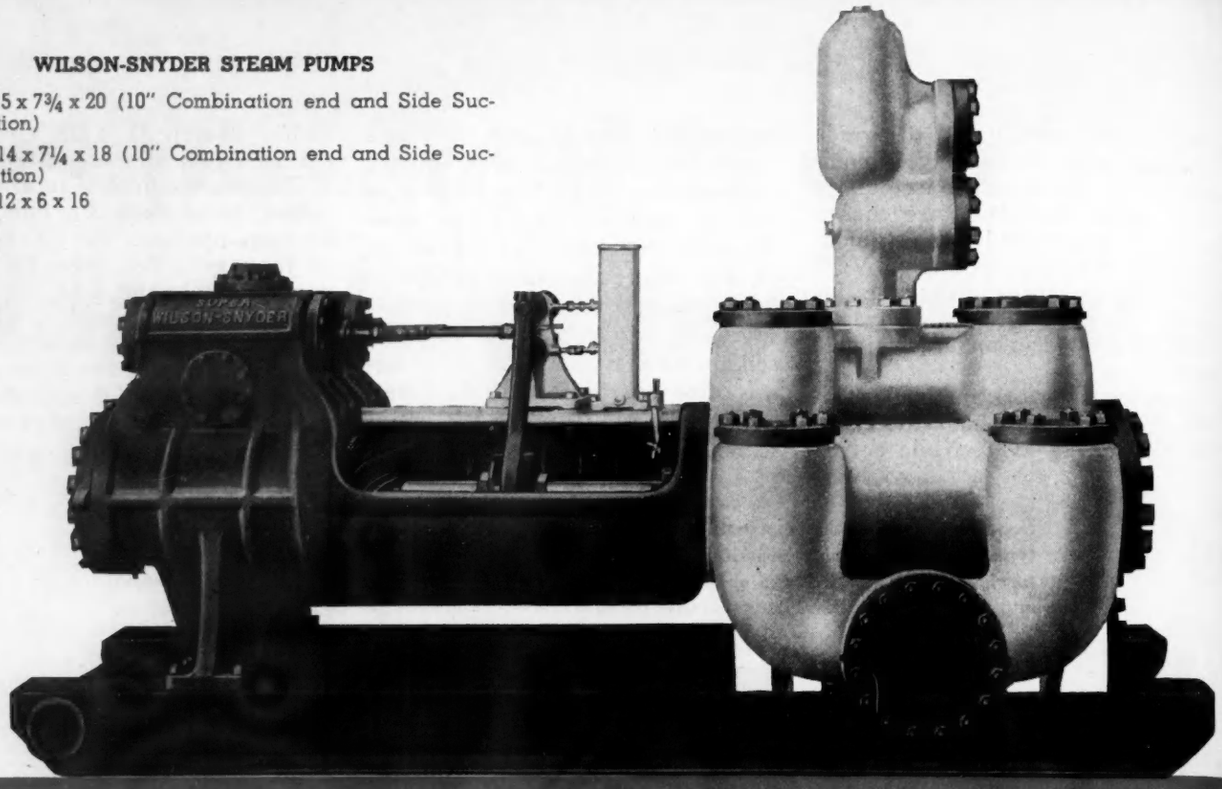

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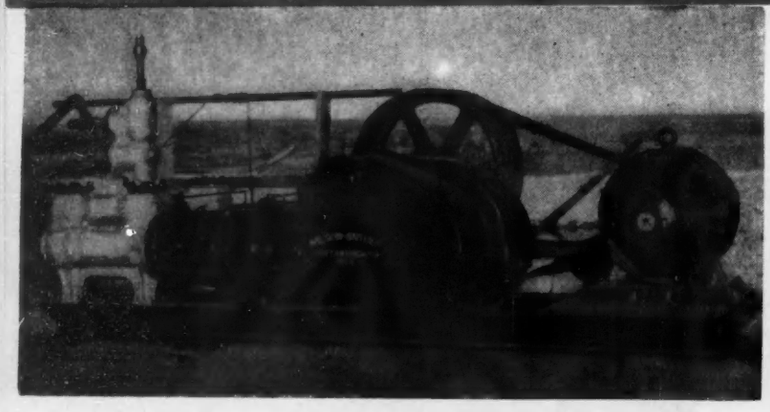

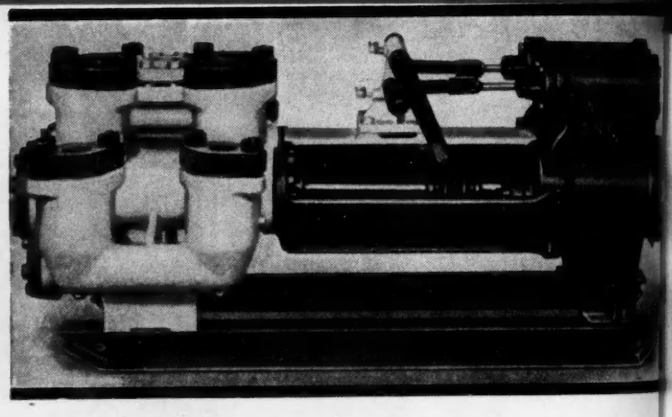

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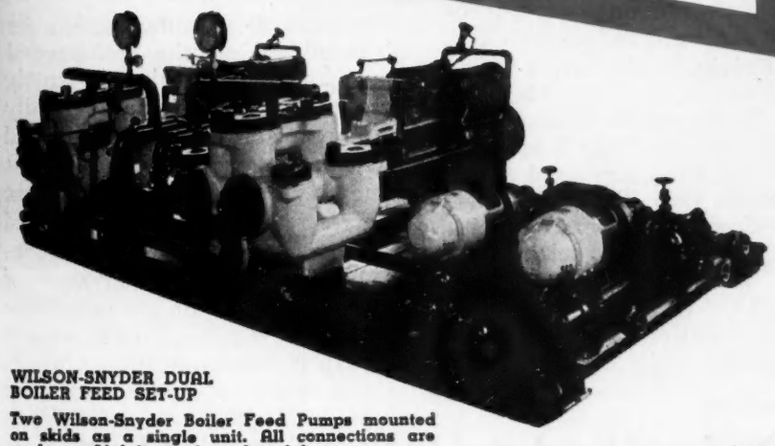

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Number of Geophysical Crews in Louisiana Coast

(Figures for the week ending on date shown)

PERIOD	Seismic Reflection	Torsion Balance	Gravity-meter	Magneto-meter	Miscel-laneous	Total
January 1, 1938	42	8	2	1	1	54
March 1, 1938	45	8	3	...	2	58
July 1, 1938	44	10	4	...	3	61
July 1, 1937	38	12	2	...	3	55
Increase or decline, as of July 1.	+ 6	— 2	+ 2	...	..	+ 6

weekly period ending June 30 in the coastal region of Louisiana reveal that there were 6 more parties in 1938 than in the same period of 1937, while geophysical work in the Texas Gulf Coast had declined from 38 crews in 1937 to 27 units in 1938. The accompanying table shows the variations of geophysical work in the Gulf Coast during the first six months of 1938, as well as a comparison of the number of crews operating, and different methods applied during the period, ending June 30, 1937, and 1938.

Find New Fields

The discovery of a number of today's active oil fields in the Gulf Coast territory can be attributed largely to geophysical work. Salt domes and structures believed to be associated with domes have been discovered as a result of geophysical surveys and have been checked by drilling. In addition to the already ascertained fields, there is a considerable number of undrilled prospects, many of which undoubtedly will prove to be prolific oil pools. During the first six months of 1938 quite a few oil fields have been discovered in the Gulf Coast region.

One of the most interesting strikes during 1938 in the Texas Gulf Coast has been the discovery of Cedar-Point, Chambers County, as all the surveying was done by means of boats in the shallow waters of the Galveston Bay. Salt Dome Oil Corporation jointly with Standard Oil Company of Texas made an extensive survey with torsion balance units and reflection seismographs during 1935, 1936 and 1937. Humble Oil & Refining Company likewise undertook exploration work in this area during 1936 and 1937, using torsion balances and seismic reflection units. The field is regarded as faulted structure, and is believed to be a deep seated salt dome.

The Fairbanks field, Harris County, although condemned a few years ago by several leading oil companies, recently has proven to be an oil field of considerable importance. Amerada Petroleum Corporation and Stanolind Oil & Gas Company operated jointly in this area with reflection units from 1935 until the beginning of 1938. Other major oil companies have participated in geophysical exploration work in that area. The Texas Company, applied the seismic reflection method during 1935. Union Producing Company and Magnolia Petroleum Company both worked with reflection seismographs during 1935 and 1937, and in 1935 Shell Petroleum Corporation and Continental Oil Company surveyed this district with torsion balances and seismic reflection units respectively. It is considered an anticline.

The Eureka field, Harris County, after several dry holes had been drilled, finally proved to be an oil bearing structure. Tide Water Associated Oil Company used reflection units in 1935, Texas Gulf Producing Company operated with torsion balances and seismic reflection units during 1936, and Stanolind Oil & Gas Company surveyed with reflection seismographs during 1936. This new field has been termed a faulted structure and is believed to be a deep seated salt dome. The initial oil producer came in a few months ago.

One of the most important discoveries in South Louisiana during the first six months of 1938 has been the Raceland field, La Fourche Parish. Extensive geophysical work was undertaken by Amerada Corporation and Louisiana Land & Exploration Company during 1936 by means of the seismic reflection and refraction methods. This new field represents a deep seated salt dome.

Timberlier Bay, La Fourche Parish, was surveyed by the Gulf Oil Corporation with gravity meter units during 1936. This field is likewise termed a deep seated salt dome, the most common structure found on the Gulf Coast.

Creole, Cameron Parish, one mile out in the Gulf of Mexico, was outlined with the reflection method by Pure Oil Company and Superior Oil Company during 1936 and 1937, and proved productive this year. This structure is also regarded a deep seated salt dome.

As a whole, geophysics has far advanced during the last several years and has eliminated costly guesswork, yet it is undoubtedly the hope of far-seeing oil men and particularly geophysicists, that some day in the not too distant future, methods will be developed by means of which it can be definitely determined in advance of the drill whether or not petroleum in commercial quantities is present beneath the surface.

Number of Geophysical Crews in Texas Gulf Coast

(Figures for the week ending on date shown)

PERIOD	Seismic Reflection	Torsion Balance	Gravity-meter	Magneto-meter	Miscel-laneous	Total
January 1, 1938	26	5	1	...	3	35
March 1, 1938	26	4	1	...	1	32
July 1, 1938	21	3	2	...	1	27
July 1, 1937	30	8	..	...	..	38
Increase or decline, as of July 1.	— 9	— 5	+ 2	...	+ 1	—11

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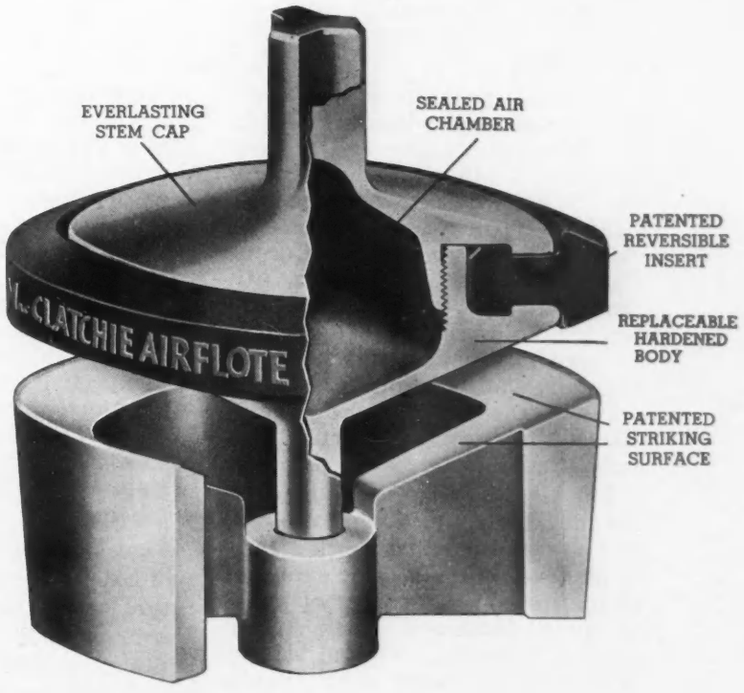

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South Texas Gulf Coast Discoveries Increase Reserves

By EARL S. POST, Staff Writer

DESPITE a material decline in drilling activity, South Texas Gulf Coastal trend continues to maintain its high discovery record, adding 19 new oil and gas fields during the first six months of 1938. In doing so, it increased the area's reserves at the mid-year to 814,995,597 barrels.

This district adjoins the Texas Gulf Coast at the border of Jackson-Wharton County and extends westwardly following the trend of the Gulf of Mexico to the Rio Grande. It includes the areas locally referred to as the Corpus Christi district, Pettus area, Mirando district and Lower Rio Grande Valley basin. While, from an area standpoint, it constitutes about one-half of South Texas, it provides the bulk of the general district's reserves, production and daily production.

The Coastal zone, after a boom like development of the last several years, likely has settled to a stable level which may be expected to continue for a number of years to come. Increased depth, wider spacing through controlled blocks, established markets, etc., should keep the drilling program within more conservative limits in the future. This, however, does not mean that this area should be looked upon for a decline in output, for even the reduced drilling has failed to keep the reserves from being developed far faster than the withdrawals.

At the mid-year, 92,490 acres had been proved productive, with an expected ultimate recovery of 1,084,076,097 barrels, of which only 269,070,500 barrels had been recovered; leaving a reserve of 814,995,597 barrels. During the 3½ years since January 1, 1935, the main period of expansion along this trend, the number of proven acres has been doubled from 46,323 acres. At the same time, total expected recovery gained 720,649,397 barrels from 363,425,700 barrels, or 189 percent. During that period, recovery mounted rapidly, but did not keep in pace with the rising expected recovery figure. This brought reserves at January 1, 1935, from 266,640,427 barrels to 815,005,597 barrels on July 1, 1938, a gain of 540,365,170 barrels, or 206 percent.

Development of the past year will have a tremendous bearing on future exploration. These developments include the first marine drilling, outlining of a new Vicksburg sand trend, establishment of deeper sand producing districts in various zones ranging from Miocene to Cockfield. This work indicates the intention of operators to reach out in an effort to build reserves in this potentially prolific basin.

Although new trends were the attraction for much of this development, only 14,785 acres of new production, in both old and new fields, were developed during the year ending July 1, and these uncovered only 167,415,000 barrels of recoverable crude. During the preceding 12-month period, 19,269 acres was developed, with a total expected recovery of 327,337,819 barrels. The difference during the period was a decline in new acreage of 4484 acres of new producing area and 159,922,819 barrels of less recoverable crude.

At the mid-year, it was determined that the 19 discoveries of 1938 had 4965 acres of developed or proved production, with a total expected recovery of 52,765,000 barrels. The remainder of the increase came from development of fields discovered since January 1. These fields provided 9820 acres of new production with an ultimate recovery of 114,650,000 barrels. Several fields of apparently large proportions have been discovered during the past few months, and they likely will materially enhance the reserve figure through their subsequent development.

Drilling activity at the mid-year was giving signs of again following an upward trend, several fairly new pools being in line for offsetting programs. It is not evident, however, that the activity will reach the same proportions as last year. The following table indicates the decline in drilling during the past five months:

Date	Number of Active Rigs
March 1	406
April 1	328
May 1	273
June 1	248
July 1	240

Completions showed a tremen-

South Texas Coast Reserves Increase

DATE	Proved Acres	Total Expected Recovery	Cumulative Recovery	Remaining Reserve
January 1, 1935	46,323	363,426,700	96,786,273	266,640,427
July 1, 1936	58,436	589,323,278	149,111,976	440,291,302
July 1, 1937	77,705	916,661,097	204,067,352	712,594,245
July 1, 1938	92,490	1,084,076,097	269,070,500	815,005,597
1937 increase over 1936	19,269	327,337,819	54,955,376	272,382,443
1938 increase over 1937	14,785	167,415,000	65,003,148	102,411,852

South Texas Gulf Coast

(Fields found in 1938 are shown in color)

dous drop. During the first six months of 1938, there were 1146 wells completed in the area, as compared with 1566 during the corresponding period of 1937, a decline of 420, or 27 percent. During the 1938 period, 341 failures, 64 gassers, and 741 oil wells were finished, while in six months of 1937, there were 377 failures, 67 gassers, and 1122 oil producers.

The 1938 discoveries contained several outstanding new fields, both from their individual value and their affect on future exploration. One particular trend already has sprung into prominence as one of the most interesting from new reserve point of view. That is the Vicksburg, a formation which provided three of the year's producing areas. A number of wildcat projects to this level are now under way along a trend 150 miles long ranging north and northeast parallel to the Gulf of Mexico from the Rio Grande. These explorations are on highly important geophysical prospects and may lead to future Vicksburg sand fields.

The Alice field, Jim Wells County, which has thus far not turned out to be the major producing area it was expected to be, has been the center of much interest. Its geological features, sand conditions, etc., studied through the development of this area will provide much information for the carrying on of Vicksburg work in other sectors of the newly uncovered trend. Late last year, Magnolia Petroleum Company opened the East Premont field, southeastern Jim Wells County, apparently in the Vicksburg formation, and at mid-year had completed three producers. It gives promise of being a big field. Vicksburg production in Starr and Goliad counties, opened this year, further define this trend.

The Frio trend, major source of production along the deeper sector of the lower Gulf Coast, continued to maintain its stellar position, providing eight of the new fields. One of these also is included in the Vicksburg group, being a multi-sand area. Turkey Creek, East White Point, and North Agua Dulce are the three outstanding discoveries in this group. East White Point, with a thick 5600-foot sand body, excellent producing conditions and an already large area, may prove the best discovery of the Frio group.

There was only one discovery in the Miocene class, being Cordelle in Jackson County, thus far a limited producing area.

The Pettus-Mirando trend continued its discovery rate with several important pools being established. Four were in the Pettus, or Cockfield sand, with the same number in the Jackson series. Of particular interest were Fitzsimmons and DeSoto, Eastern Duval County, producing from 4300 and 5100 feet, respectively. They are further successes for this Eastern Duval County exploration, a follow-up to the Sweden sector development.

First production below 9000 feet in this district was established through the completion of Atlantic Refining Company's Hidalgo County wildcat on the Weslaco prospect. American Rio Grande Land & Irrigation Company 1, on January 18, flowed 19 barrels of 48.6 gravity distillate and a large volume of gas through 3/8-inch choke in 24 hours after casing had been perforated at 8995-9005 feet. The test, however, was plugged back and completed at 8634-42 feet, where it was completed as a distillate producer to open South Texas' deepest field.

Summing up the activity of the first six months of 1938, it readily can be seen that the South Texas Gulf Coast region definitely has settled to what likely will be a normal, continued development. Barring unforeseen developments through the discovery of an outstanding oil pool or break in the crude oil market, a well planned, conservative wildcatting and development program is evidenced for the future.

Data on South Texas Gulf Coast 1938 Discoveries

County	Field	Date Discovered	DISCOVERY COMPANY, LEASE, WELL, LOCATION	Elev. (Dk. Flr.) Feet	Depth	Sand	Name Horizon	Initial Production	Grav. Degrees	Method of Lift (Chokes)	No. Sands	Producing Zones
Bee	N. Normanna	2-14-38	Dirks Brothers' Beck 1, Section 17	337	4273	4215-63	Pettus	75 bbls.	46.5	Flow 4/64	1	Discovery level
Duval	Los Picachos	4-13-38	V. G. Schimmel's Hagist 5, Section 265	471	2196	2166-96	Govt. Wells	28 bbls.	23.0	Pumping	1	Discovery level
Duval	Casa Blanca	5-31-38	Magnolia Pet. Co.'s D. C. R. C. 1, Section 291	466	1190	1180-90	Cole	74 bbls.	20.0	Pumping	1	Discovery level
Duval	Fitzsimmons	5-26-38	H. J. Porter et al's Fitzsimmons 1, Section 291	460	4303	4270-4303	Pettus	108 bbls.	47.1	Flow 4/64	1	3600-4300 Jackson-Cockfield
Duval	De Soto	6-20-38	Arkansas Fuel Oil Co.'s Cuellar 1, Section 96	434	5520	5108-36	Pettus	116 bbls.	45.0	Flow 3/8	1	Discovery level
Goliad	Sarco Creek	1-23-38	R. B. Swiger et al's Wood 1-B, Heard Survey	113	5048	5009-48	Vicksburg	35 bbls.	27.1	Pump	1	Discovery level
Hidalgo	Weslaco	2- 6-38	Atlantic Refining Co.'s ARGL&I 1, Section 175	82	9182	8634-42	Frio	75 bbls. (*)	51.5	Flow 3/8	2	8635-9005 Frio
Jackson	Cordelle	3-21-38	H. J. Porter et al's Foust 1, White Survey	99	5177	2650-75	Miocene	177 bbls.	23.8	Flow 4/64	1	Discovery level
Jim Wells	Alfred	2-24-38	Rowan & Hope, Inc.'s Adams 1, Section 19	193	5509	3223-34	Frio	125 bbls.	47.3	Flow 4/32	2	3220-3350 Frio
Jim Wells	Alice	4-15-38	Pressnal & Mosser's Mortgage Inv. 1, LaVaca Gr	209	3496	3480-96	Frio	2,800,000 cu. ft.	....	Flow 4/64	5	3300-5350 Frio-Vicksburg
Live Oak	Ramirena	3-13-38	Hantho-Nelson et al's Bell 1, Parks Survey	286	5290	5052-79	Pettus	3,000,000 cu. ft.	39.7	Flow 1/8	1	Discovery level
Nueces	Turkey Creek	1- 4-38	L. A. Douglas et al's McKinzie 1, Section 417	68	5813	5794-5813	Frio	571 bbls.	35.2	Flow 1/4	4	3800-6100 Heterostegina-Frio
Nueces	N. Agua Dulce	3- 3-38	Union Producing Co.'s Simmons 1, Agua Dulce Gr	104	8706	4810-34	Frio	60 bbls.	48.2	Flow 1/4	1	Discovery level
San Patricio	E. Plymouth	5- 8-38	Humble Oil & Refining Co.'s Brigham 1, Section 62	62	5665	5627-65	Frio	217 bbls.	38.3	Flow 4/64	1	Discovery level
San Patricio	E. White Point	2-24-38	Plymouth Oil Co.'s Smith & Talbert 1, Section 37	44	4836	4808-36	Heterostegina	10,000,000 cu. ft.	24.5	Flow 4/32	1	Discovery level
Starr	Rincon	2-21-38	Transwestern Oil Co.'s Slick School 1, Section 266	472	6862	4172-4259	Vicksburg	75 bbls. (*)	59.0	Flow 1/4	1	Discovery level
Starr	Young	6-14-38	Sun Oil Co.'s Young 1, Por 79	374	3008	2708-30	Basal Jackson	3,000,000 cu. ft.	....	Flow 4/64	1	Discovery level
Victoria	E. Telferner	1- 1-38	W. V. Bowles & Co.'s Robertson 1, Brunham Survey	64	6138	5100-14	Frio	125 bbls.	28.7	Flow 11/64	1	Discovery level
Webb	Loma Valades	1- 1-38	H. E. Nessly's Bruni 3, Section 499	808	1850	1790-1850	Cole	7,000,000 cu. ft.	....	Flow 3/8	1	Discovery level

(*) Distillate producing areas.

Gulf Coast's Production Record Is Impressive

By L. J. LOGAN, Associate Editor

THE Gulf Coast region of Texas and Louisiana offers a remarkable picture in crude oil production, when considered as to past, present, and future.

The Coastal Plains have furnished some of the most renowned of American oil fields—fields that achieved national prominence because of prolific output. Those fields have included: Spindle Top, the first major field of Texas, where gushers were a national sensation at the beginning of this century; West Columbia, where individual wells produced several millions of barrels of crude oil each within periods of a few years; and more recently, Conroe, a new type field of large area, and one of the richest in the country, which

Texas Gulf Coast Crude Petroleum Production, by Fields, by Years

Complete Production History of District, in Barrels of 42 U. S. Gallons

(Sources.—Except as otherwise indicated in footnotes, figures are from annual volumes of *Mineral Resources* and *Minerals Yearbook.*)

YEAR	Ace Polk County	Allen Brazoria County	Aldine Harris County	Amelia Jefferson County	Anahuac Chambers County	Arriola Hardin County	Bammel Harris County	Barbers Hill Chambers County	Batson Hardin County	Big Creek Fort Bend County	Big Hill Jefferson County	[D]Big Hill Matagorda County	Blue Ridge Fort Bend County
1903	.....	.....	.....	.....	.....	.....	.....	.....	4,518	.....	.....	.....	.....
1904	.....	.....	.....	.....	.....	.....	.....	.....	10,904,737	.....	.....	151,936	.....
1905	.....	.....	.....	.....	.....	.....	.....	.....	3,774,841	.....	.....	46,471	.....
1906	.....	.....	.....	.....	.....	.....	.....	.....	2,289,507	.....	.....	3,600	.....
1907	.....	.....	.....	.....	.....	.....	.....	.....	2,164,453	.....	.....	1,573	.....
1908	.....	.....	.....	.....	.....	.....	.....	.....	1,593,570	.....	.....	[B]	.....
1909	.....	.....	.....	.....	.....	.....	.....	.....	1,206,214	.....	.....	.....	.....
1910	.....	.....	.....	.....	.....	.....	.....	.....	1,113,767	.....	.....	.....	.....
1911	.....	.....	.....	.....	.....	.....	.....	.....	1,023,493	.....	.....	.....	.....
1912	.....	.....	.....	.....	.....	.....	.....	.....	844,563	.....	.....	.....	.....
1913	.....	.....	.....	.....	.....	.....	.....	.....	741,350	.....	.....	.....	.....
1914	.....	.....	.....	.....	.....	.....	.....	.....	775,804	.....	.....	.....	.....
1915	.....	.....	.....	.....	.....	.....	.....	.....	703,686	.....	.....	.....	.....
1916	.....	.....	.....	.....	.....	.....	.....	[A]	744,915	.....	.....	.....	.....
1917	.....	.....	.....	.....	.....	.....	.....	.....	692,417	.....	.....	.....	.....
1918	.....	.....	.....	.....	.....	.....	.....	[I]20,000	634,736	.....	.....	.....	.....
1919	.....	.....	.....	.....	.....	.....	.....	[I]169,415	560,000	.....	.....	.....	[I]24,910
1920	.....	.....	.....	.....	.....	.....	.....	[I]136,367	527,000	.....	.....	.....	92,000
1921	.....	.....	.....	.....	.....	.....	.....	[I]49,885	495,000	.....	.....	.....	326,000
1922	.....	.....	.....	.....	.....	.....	.....	[I]236,185	434,000	3,700	.....	.....	349,000
1923	.....	.....	.....	.....	.....	.....	.....	[I]172,660	403,000	[I]17,545	[I]13,853	.....	287,000
1924	.....	.....	.....	.....	.....	.....	.....	[I]72,437	464,000	293,000	[I]3,258	.....	278,000
1925	.....	.....	.....	.....	.....	.....	.....	[I]46,712	432,000	310,000	.....	.....	313,000
1926	.....	.....	.....	.....	.....	.....	.....	[I]146,312	456,000	520,000	.....	.....	486,000
1927	.....	[G]2,922	.....	.....	.....	.....	.....	[T]68,575	462,000	1,243,000	.....	.....	1,210,000
1928	.....	[G]17,457	.....	.....	.....	.....	.....	[T]322,950	550,000	811,000	.....	.....	2,205,000
1929	.....	[G]5,473	.....	.....	.....	.....	.....	4,552,000	444,000	1,496,000	.....	.....	1,194,000
1930	.....	[G]26,385	.....	.....	.....	.....	.....	7,441,000	418,000	1,390,000	.....	.....	644,000
1931	.....	[G]11,410	.....	.....	.....	.....	.....	7,651,000	330,000	858,000	.....	.....	378,000
1932	.....	[G]5,079	.....	.....	.....	[G]7,630	.....	7,320,000	268,000	425,000	.....	.....	328,000
1933	.....	[G]3,044	.....	.....	.....	[G]191,219	.....	8,082,000	208,000	413,000	.....	.....	295,000
1934	[G]5,900	[G]4,336	.....	.....	.....	446,000	.....	6,820,000	246,000	365,000	.....	.....	299,000
1935	[G]21,672	[G]3,721	.....	.....	358,000	404,000	.....	6,765,000	588,000	362,000	.....	.....	335,000
1936	[G]28,000	[G]3,000	.....	[G]189,000	[G]2,574,000	[G]390,000	.....	[G]5,493,000	[G]659,000	[G]392,000	.....	.....	[G]543,000
1937	[G]44,000	[G]4,000	[G]7,000	[G]1,165,000	[G]4,310,000	[G]214,000	.....	[G]4,399,000	[G]633,000	[G]379,000	.....	.....	[G]347,000
Sub-total	99,572	86,827	7,000	1,354,000	7,242,000	1,652,849	.....	59,964,498	37,789,571	9,278,245	17,111	203,580	9,933,850
1938 (5 months)	[G]9,518	[G]1,765	.....	[G]562,038	[G]1,222,817	[G]88,108	G168	[G]1,483,108	[G]241,082	[G]99,655	.....	.....	[G]102,158
Total	109,090	88,592	7,000	1,916,038	8,464,817	1,740,957	168	61,447,606	38,030,653	9,377,900	17,111	203,580	10,036,008

See footnotes on page 132.

Table continued next page

already has nearly equaled the cumulative production of the leading older type fields.

Past Production Large

The Texas Gulf Coast alone has produced over a billion barrels of crude oil, and with the Louisiana division included, the region has yielded nearly a billion and a half barrels. Up to June 1 this year, the production of the Gulf Coast had aggregated 1,433,495,264 barrels, including 1,081,969,445 barrels from the Texas division and 351,525,819 barrels from the Louisiana portion. (Figures based largely on government records.)

These figures are impressive when it is considered that the all-time crude oil production of all fields of the United States has been only a little over 20 billion barrels,

[*Continued on page 132*]

Texas Gulf Coast Crude Oil Production, by Fields, by Years—(Continued)

YEAR	Boling Wharton-Fort Bend Counties	Brenham Washington County	Buckeye Matagorda County	Call Newton County	Clay Creek Washington County	Cedar Bayou Chambers County	Cedar Point Chambers County	Cheek Jefferson County	Clear Lake Harris County	Cleveland Liberty County	Conroe Montgomery County	Cotton Lake Chambers County	Damon Mound Brazoria County	Danbury Brazoria County	Dickinson Galveston County
1915	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[A]	.....	.....
1916	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[A]	.....	.....
1917	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[E]124,325	.....	.....
1918	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[E]283,527	.....	.....
1919	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	191,000	.....	.....
1920	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	379,000	.....	.....
1921	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	666,000	.....	.....
1922	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	754,000	.....	.....
1923	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	628,000	.....	.....
1924	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	520,000	.....	.....
1925	40,000	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	416,000	.....	.....
1926	1,175,000	[G,N]15,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	341,000	.....	.....
1927	753,000	[G]12,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	312,000	.....	.....
1928	814,000	[G]47,330	.....	.....	[G]5,607	.....	.....	.....	.....	.....	.....	.....	291,000	.....	.....
1929	580,000	[G]76,246	.....	.....	[G]607,006	.....	.....	.....	.....	.....	.....	.....	224,000	.....	.....
1930	378,000	[G]52,606	.....	.....	[G]619,187	.....	.....	.....	.....	.....	.....	.....	224,000	.....	.....
1931	269,000	[G]33,111	.....	.....	553,000	.....	.....	.....	.....	.....	[G]1,000	.....	282,000	.....	.....
1932	188,000	[G]20,461	105,000	.....	356,000	.....	.....	.....	.....	.....	2,630,000	.....	219,000	.....	.....
1933	126,000	[G]11,849	272,000	.....	334,000	.....	.....	.....	.....	[G]1,300	21,215,000	.....	[G]260,519	.....	.....
1934	209,000	[G]11,684	75,000	.....	266,000	.....	.....	.....	.....	172,000	17,761,000	.....	113,000	[G]3,612	[G]6,903
1935	182,000	[G]8,488	72,000	.....	361,000	.....	.....	.....	.....	228,000	15,276,000	.....	193,000	.....	280,000
1936	[G]348,000	[G]8,000	[G]70,000	.....	[G]397,000	.....	.....	.....	.....	[G]301,000	[G]14,928,000	[G]37,000	[G]182,000	.....	[G]905,000
1937	[G]553,000	[G]8,000	[G]71,000	[G]6,000	[G]312,000	.....	.....	.....	.....	[G]208,000	[G]15,038,000	[G]366,000	[G]135,000	[G]7,000	[G]1,746,000
Sub-total	5,615,000	305,275	665,000	6,000	3,810,800	.....	.....	.....	.....	910,300	86,849,000	403,000	6,738,371	10,612	2,937,903
1938 (5 mos.)	[G]241,484	[G]3,249	[G]37,286	[G]2,375	81,395	[G]680	[G]26,239	[G]16,301	[G]13,926	[G]54,196	[G]4,907,692	[G]194,567	[G]48,566	[G]26,983	[G]944,611
Total	5,856,484	308,524	702,286	8,375	3,892,195	[G]680	[G]26,239	[G]16,301	[G]13,926	964,496	91,756,692	597,567	6,786,937	37,595	3,882,514

YEAR	Edna Jackson County	Esperson Liberty County	Eureka Harris County	Fairbanks Harris County	Fannett Jefferson County	Friendswood Harris County	Ganado Jackson County	Garwood Colorado County	Goose Creek Harris County	Greens Bayou Harris County	Green Lake Galveston County	Hankamer Liberty County	Hardin Liberty County
1907	.....	.....	.....	.....	.....	.....	.....	.....	[A]	.....	.....	.....	.....
1908	.....	.....	.....	.....	.....	.....	.....	.....	[K]15,000	.....	.....	.....	.....
1909	.....	.....	.....	.....	.....	.....	.....	.....	[A]	.....	.....	.....	.....
1910	.....	.....	.....	.....	.....	.....	.....	.....	[A]	.....	.....	.....	.....
1911	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1912	.....	.....	.....	.....	.....	.....	.....	.....	43,898	.....	.....	.....	.....
1913	.....	.....	.....	.....	.....	.....	.....	.....	249,641	.....	.....	.....	.....
1914	.....	.....	.....	.....	.....	.....	.....	.....	134,748	.....	.....	.....	.....
1915	.....	.....	.....	.....	.....	.....	.....	.....	119,336	.....	.....	.....	.....
1916	.....	.....	.....	.....	.....	.....	.....	.....	397,391	.....	.....	.....	.....
1917	.....	.....	.....	.....	.....	.....	.....	.....	7,300,279	.....	.....	.....	.....
1918	.....	.....	.....	.....	.....	.....	.....	.....	[P]8,923,635	.....	.....	.....	.....
1919	.....	.....	.....	.....	.....	.....	.....	.....	[P]5,600,585	.....	.....	.....	.....
1920	.....	.....	.....	.....	.....	.....	.....	.....	[P]4,339,625	.....	.....	.....	.....
1921	.....	.....	.....	.....	.....	.....	.....	.....	[P]4,590,115	.....	.....	.....	.....
1922	.....	.....	.....	.....	.....	.....	.....	.....	[P]4,529,815	.....	.....	.....	.....
1923	.....	.....	.....	.....	.....	.....	.....	.....	[P]5,853,340	.....	.....	.....	.....
1924	.....	.....	.....	.....	.....	.....	.....	.....	[P]3,894,563	.....	.....	.....	.....
1925	.....	.....	.....	.....	.....	.....	.....	.....	[P]3,417,288	.....	.....	.....	.....
1926	.....	.....	.....	.....	.....	.....	.....	.....	[P]3,354,688	.....	.....	.....	.....
1927	.....	.....	.....	.....	[A]	.....	.....	.....	[P]3,033,425	.....	.....	.....	.....
1928	.....	.....	.....	.....	[G]3,800	.....	.....	.....	[P]2,403,050	.....	.....	.....	.....
1929	.....	[G]48,460	.....	.....	292,000	.....	.....	.....	2,154,000	.....	.....	[G]18,122	.....
1930	.....	819,000	.....	.....	350,000	.....	.....	.....	1,690,000	.....	.....	546,000	.....
1931	.....	712,000	.....	.....	180,000	.....	.....	.....	1,460,000	.....	.....	798,000	.....
1932	.....	509,000	.....	.....	151,000	.....	.....	gas	1,232,000	.....	.....	691,000	.....
1933	.....	481,000	.....	.....	146,000	.....	.....	[G]2,024	1,163,000	.....	.....	547,000	.....
1934	.....	452,000	.....	.....	195,000	.....	.....	.....	1,203,000	.....	.....	378,000	.....
1935	.....	305,000	[G]4,622	.....	237,000	.....	[G]14,235	.....	1,069,000	.....	.....	565,000	[G]53,782
1936	.....	[G]634,000	[G]6,000	[G]28,000	[G]329,000	.....	.....	.....	[G]964,000	[G]3,000	[G]20,000	[G]773,000	[G]133,000
1937	[G]1,000	[G]600,000	[G]24,000	[G]130,000	[G]289,000	[G]93,000	14,000	.....	[G]847,000	[G]5,000	[G]9,000	[G]576,000	[G]242,000
Sub-total	1,000	4,650,460	34,622	158,000	2,172,800	93,000	28,235	2,024	69,982,422	8,000	29,000	4,942,122	428,782
1938 (5 months)	.....	[G]196,629	[G]30,657	[G]56,402	[G]84,881	[G]254,066	.....	[G]242	[G]238,401	[G]18,777	[G]2,422	[G]180,421	[G]496,550
Total	1,000	4,847,089	65,279	214,402	2,257,681	347,066	28,235	2,266	70,220,823	26,777	31,422	5,122,543	925,332

See footnotes page 132.

Table continued on page 128

BACK IN 1901, thirty-three years before the BRONZOID process was developed, we were making good brass and bronze castings for oil field equipment manufacturers. But, since its introduction only a few years ago, BRONZOID has become so universally synonymous with perfect bearings that we now hear ourselves referred to as "the BRONZOID people."

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Texas Gulf Coast Crude Oil Production, by Fields, by Years—(Continued)

YEAR	Hastings Brazoria County	Hawkinsville Matagorda County	High Island Galveston County	Hitchcock Galveston County	Hockley Harris County	Hoskins Mound Brazoria County	Hull Liberty County	Humble Harris County	Kittrell Houston County	La Belle Jefferson County	Livingston Polk County	Lochridge Brazoria County	Lost Lake Chambers County
1904								[A, M]					
1905						[A]		15,594,310					
1906						76,991		3,571,445					
1907						11,694		2,929,640					
1908						[J]11,500		3,778,521					
1909						[A]		3,237,060					
1910						[A]		2,495,511					
1911						[A]		2,426,220					
1912								1,829,923					
1913								1,504,880					
1914								2,799,458					
1915								11,061,802					
1916								10,925,805					
1917								7,389,831					
1918							244,887	6,555,173					
1919							1,273,000	3,706,000					
1920							3,909,000	3,607,000					
1921							8,150,000	3,004,000					
1922			[G]2,700				6,546,000	2,284,000					
1923			[I]19,018		[A]		7,300,000	2,275,000					
1924			[I]19,141		[I]6,614		7,074,000	2,224,000					
1925			121,000				6,944,000	1,864,000					
1926			60,000				7,058,000	1,568,000					
1927			96,000				5,685,000	1,485,000					
1928			163,000				4,055,000	1,242,000					
1929			449,000				3,376,000	2,990,000					99,000
1930			331,000				3,128,000	5,859,000			[H]		209,000
1931			255,000				2,264,000	3,022,000			[H]		96,000
1932			1,547,000		[G]938		1,891,000	2,144,000			[G]392		127,000
1933			2,534,000		[G]13,128		1,946,000	1,722,000			435,000		84,000
1934	[G]729		2,747,000		[G]2,385		3,453,000	1,188,000	[G]35,327		744,000		67,000
1935	689,000		2,513,000				2,311,000	1,230,000	[G]382,151		1,057,000		84,000
1936	[G]2,425,000	[G]2,000	[G]2,067,000				[G]1,997,000	[G]1,189,000	[G]354,000		[G]1,106,000		[G]68,000
1937	[G]5,839,000		[G]1,176,000	[G]18,000			[G]2,502,000	[G]1,287,000	[G]350,000	15,000	[G]986,000	[G]279,000	[G]52,000
Sub-total	9,953,729	2,000	14,099,859	18,000	23,065	100,185	81,106,887	119,989,579	1,121,478	15,000	4,328,392	279,000	886,000
1938 (5 months)	[G]3,099,689		[G]328,834	[G]28,099			[G]1,275,906	[G]510,676	[G]93,087	[G]60,988	[G]304,287	[G]192,916	[G]17,568
Total	12,053,418	2,000	14,428,693	46,099	23,065	100,185	82,382,793	120,500,255	1,214,565	75,988	4,632,679	471,916	903,568

YEAR	Louise Wharton County	Magnet Wharton County	Manvel Brazoria County	[B]Markham Matagorda County	Mauritz Jackson County	McCrosky Matagorda County	McFaddin Jefferson County	Moss Bluff Liberty-Chambers Counties	Mykawa Harris County	Nash Fort Bend County	Nome Jefferson County	North Cheek Jefferson County	North Dayton Liberty County	Old Ocean Brazoria County
1905													60,294	
1906													92,850	
1907													108,038	
1908				[B]62,640									39,901	
1909				29,103									17,647	
1910				455,999									9,582	
1911				561,828									4,344	
1912				613,292									12,151	
1913				294,553									13,329	
1914				164,192									18,791	
1915				137,841									10,378	
1916				158,338									8,571	
1917				128,011									9,995	
1918				64,616									8,526	
1919				54,000									8,000	
1920				57,000									17,000	
1921				49,000									40,000	
1922				35,000									29,000	
1923				21,000									35,000	
1924				66,000									36,000	
1925				41,000									20,000	
1926				51,000						207,000			[G]25,700	
1927				109,000						395,000			[G]57,579	
1928				112,000						491,000			[T]210,000	
1929				133,000					[G]1,446	193,000			214,000	
1930				98,000				[G]12,254	[G]24,006	110,000			406,000	
1931			[G]75,307	218,000				154,000	[G]59,249	187,000			202,000	
1932			160,000	516,000				38,000	[G]101,104	55,000			100,000	
1933	[G]5,913		586,000	351,000				[G]6,011	[G]98,199	[G]30,048			55,000	
1934	178,000		1,020,000	389,000					133,000	16,000			74,000	[G]17,568
1935	409,000		2,467,000	459,000					705,000	13,000			62,000	[G]104,227
1936	[G]537,000	[G]3,000	[G]3,037,000	[G]561,000					[G]1,183,000	[G]16,000	[G]56,000		[G]47,000	[G]160,000
1937	[G]609,000	[G]126,000	[G]3,464,000	[G]622,000	48,000		1,000		[G]663,000	[G]11,000	[G]585,000	[G]27,000	[G]40,000	[G]448,000
Sub-total	1,738,913	129,000	10,809,000	6,612,413	48,000		1,000	210,265	2,968,004	1,724,048	641,000	27,000	2,092,676	729,795
1938 (5 mos.)	[G]207,633	[G]132,829	[G]1,389,909	[G]251,436		[G]7,518			[G]214,760	[G]811	[G]210,688	[G]21,799	[G]14,855	[G]499,135
Total	1,946,546	261,829	12,198,909	6,863,849	48,000	7,518	1,000	210,265	3,182,764	1,724,859	851,688	48,799	2,107,531	1,228,930

See footnotes page 132.

Table continued next page

YEAR	Orange	Orchard	Palacios	Pickett Ridge	Pierce Junction	Pledger	Port Neches	Raccoon Bend Shallow	Raccoon Bend Deep	Rockland	Sandy Point	San Felipe	Saratoga
	Orange County	Fort Bend County	Matagorda County	Wharton County	Harris County	Brazoria County	Orange County	Austin-Waller Counties	Austin-Waller Counties	Jasper County	Brazoria County	Austin-Waller Counties	Hardin County
1901	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[A]
1902	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[D]
1903	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[C]148,159
1904	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	739,239
1905	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,125,028
1906	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,182,057
1907	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,130,928
1908	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,634,786
1909	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,183,559
1910	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,024,348
1911	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	925,777
1912	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,116,655
1913	17,706	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	937,720
1914	43,208	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	889,743
1915	21,697	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	864,266
1916	17,758	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	781,128
1917	7,023	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	682,797
1918	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	722,353
1919	[H]4,400	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	737,000
1920	[H]4,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	849,000
1921	470,000	.....	.....	.....	1,239,000	.....	.....	.....	.....	.....	.....	.....	1,129,000
1922	5,345,000	.....	.....	.....	1,020,000	.....	.....	.....	.....	.....	.....	.....	713,000
1923	4,649,000	.....	.....	.....	313,000	.....	.....	.....	.....	.....	.....	.....	626,000
1924	3,958,000	.....	.....	.....	154,000	.....	.....	.....	.....	.....	.....	.....	543,000
1925	4,816,000	.....	.....	.....	265,000	.....	.....	.....	.....	.....	.....	.....	514,000
1926	3,458,000	75,000	.....	.....	948,000	.....	.....	.....	.....	.....	.....	.....	482,000
1927	1,803,000	22,000	.....	.....	2,954,000	.....	.....	[G]1,000	.....	.....	.....	.....	413,000
1928	1,415,000	44,000	.....	.....	3,899,000	.....	.....	[G]96,775	.....	[G]1,800	.....	.....	343,000
1929	1,006,000	44,000	.....	.....	5,160,000	.....	242,000	[G]2,089,909	.....	[G]10,990	.....	.....	333,000
1930	790,000	636,000	.....	.....	3,847,000	.....	672,000	[G]3,866,149	.....	[G]5,604	.....	.....	380,000
1931	618,000	495,000	.....	.....	2,831,000	.....	503,000	[G]2,692,333	.....	[G]1,347	.....	.....	360,000
1932	451,000	496,000	.....	.....	1,763,000	[G]500	553,000	[G]1,771,323	.....	[G]5,183	.....	.....	326,000
1933	312,000	413,000	.....	.....	1,524,000	[G]15,906	383,000	[G]1,501,793	.....	[G]3,967	.....	.....	302,000
1934	289,000	457,000	.....	.....	1,196,000	[G]1,100	557,000	[G]1,352,185	[G]136,442	[G]2,644	.....	[G]4,635	291,000
1935	263,000	238,000	.....	[G]48,786	1,093,000	[G]82	593,000	[G]1,082,040	[G]599,170	[G]4,143	.....	[G]8,664	315,000
1936	[G]243,000	[G]205,000	.....	[G]669,000	[G]1,327,000	.....	[G]566,000	[G]961,000	[G]961,000	[G]500	.....	[G]3,000	[G]371,000
1937	[G]253,000	[G]179,000	[G]31,000	[G]703,000	[G]1,246,000	.....	[G]447,000	[G]800,000	[G]1,203,000	.....	[G]51,000	[G]2,000	[G]351,000
Sub-total	30,254,792	3,304,000	31,000	1,420,786	30,779,000	17,588	4,516,000	16,214,507	2,899,612	36,178	51,000	18,299	28,466,543
1938 (5 months)	[G]155,879	[G]60,440	[G]33,178	[G]213,096	[G]474,893	.....	[G]182,428	[G]209,800	[G]361,118	.....	[G]44,507	[G]621	131,822
Total	30,410,671	3,364,440	64,178	1,633,882	31,253,893	17,588	4,698,428	16,424,307	3,260,730	36,178	95,507	18,920	28,598,365

Mineral Resources Figures on Raccoon Bend (Shallow and Deep)

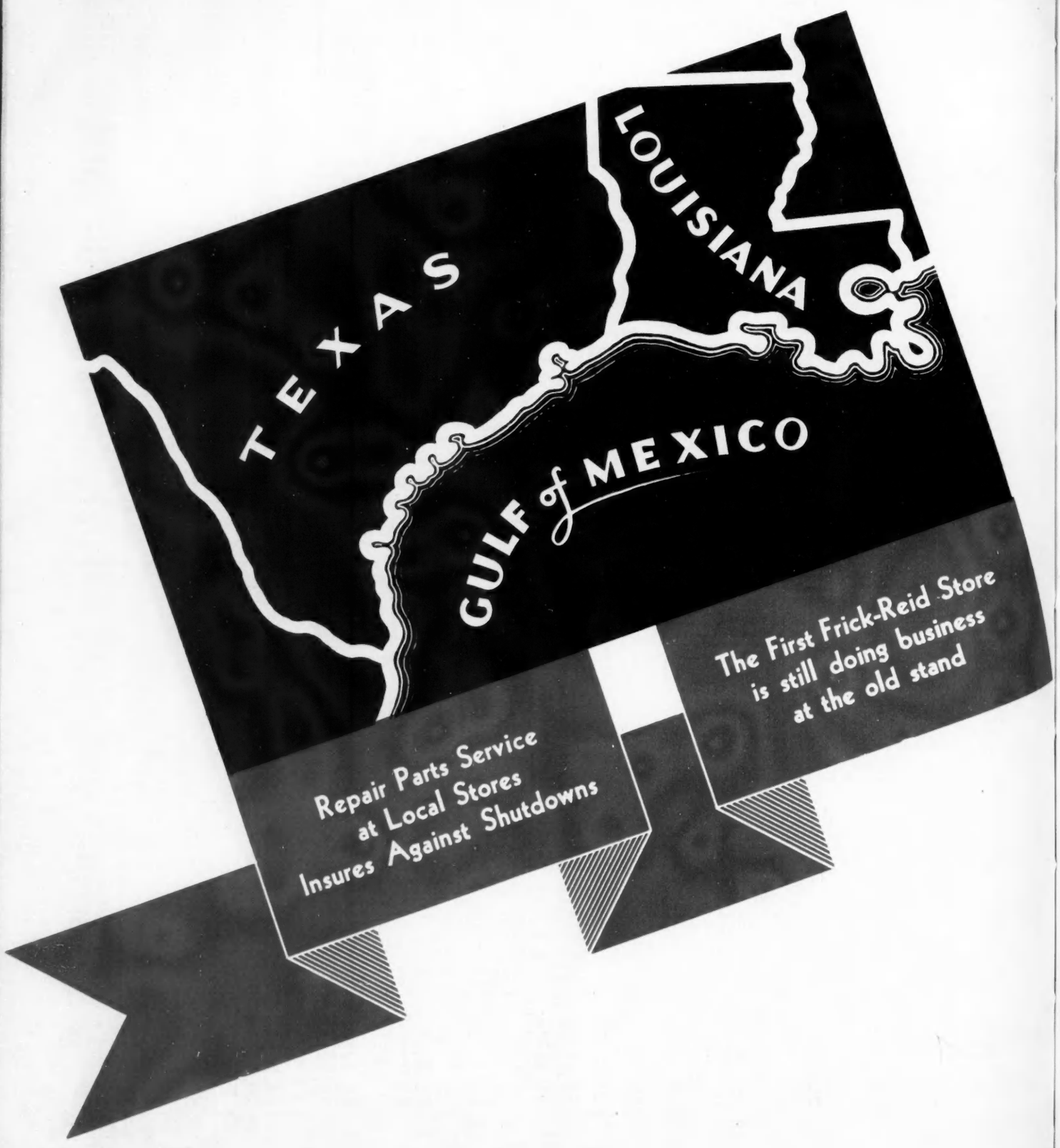
YEAR	Bbls. Prod.
1927	1,000
1928	98,000
1929	2,084,000
1930	3,893,000
1931	2,704,000
1932	1,814,000
1933	1,544,000
1934	1,489,000
1935	1,681,000
Total	15,308,000

YEAR	Seabreeze	Segno	Sheppards Mott	Silsbee	Sour Lake	South Bay City	South Houston	South Liberty	Spindle Top	Splendora	Spurger	Stratton Ridge
	Chambers County	Polk County	Matagorda County	Hardin County	Hardin County	Matagorda County	Harris County	Liberty County	Jefferson County	Montgomery County	Tyler County	Brazoria County
1893–1900	.....	.....	.....	.....	[F]	.....	.....	.....	.....	.....	.....	.....
1901	.....	.....	.....	.....	[A]	.....	.....	.....	3,593,113	.....	.....	.....
1902	.....	.....	.....	.....	[D]44,838	.....	.....	.....	17,420,949	.....	.....	.....
1903	.....	.....	.....	.....	[C]8,700,000	.....	.....	.....	8,600,905	.....	.....	.....
1904	.....	.....	.....	.....	6,442,357	.....	.....	.....	3,433,842	.....	.....	.....
1905	.....	.....	.....	.....	3,362,153	.....	.....	.....	1,652,780	.....	.....	.....
1906	.....	.....	.....	.....	2,156,010	.....	.....	.....	1,077,492	.....	.....	.....
1907	.....	.....	.....	.....	2,353,940	.....	.....	.....	1,699,943	.....	.....	.....
1908	.....	.....	.....	.....	1,595,060	.....	.....	.....	1,747,537	.....	.....	.....
1909	.....	.....	.....	.....	1,703,798	.....	.....	.....	1,388,107	.....	.....	.....
1910	.....	.....	.....	.....	1,518,723	.....	.....	.....	1,182,436	.....	.....	.....
1911	.....	.....	.....	.....	1,364,880	.....	.....	.....	965,939	.....	.....	.....
1912	.....	.....	.....	.....	1,175,108	.....	.....	.....	822,916	.....	.....	.....
1913	.....	.....	.....	.....	1,348,053	.....	.....	.....	716,374	.....	.....	.....
1914	.....	.....	.....	.....	5,209,208	.....	.....	.....	580,130	.....	.....	.....
1915	.....	.....	.....	.....	4,114,622	.....	.....	.....	388,266	.....	.....	.....
1916	.....	.....	.....	.....	4,923,332	.....	.....	.....	340,441	.....	.....	.....
1917	.....	.....	.....	.....	4,763,004	.....	.....	.....	380,039	.....	.....	.....
1918	.....	.....	.....	.....	3,407,696	.....	.....	.....	557,128	.....	.....	.....
1919	.....	.....	.....	.....	2,709,000	.....	.....	.....	407,000	.....	.....	.....
1920	.....	.....	.....	.....	2,024,000	.....	.....	.....	322,000	.....	.....	.....
1921	.....	.....	.....	.....	1,802,000	.....	.....	.....	344,000	.....	.....	.....
1922	.....	.....	.....	.....	1,675,000	.....	.....	.....	289,000	.....	.....	[B]8,400
1923	.....	.....	.....	.....	1,906,000	.....	.....	.....	326,000	.....	.....	[B]675
1924	.....	.....	.....	.....	1,588,000	.....	.....	.....	359,000	.....	.....	[B]9,085
1925	.....	.....	.....	.....	1,444,000	.....	.....	4,416,000	412,000	.....	.....	.....
1926	.....	.....	.....	.....	2,004,000	.....	.....	1,992,000	13,441,000	.....	.....	.....
1927	.....	.....	.....	.....	1,593,000	.....	.....	1,084,000	20,751,000	.....	.....	.....
1928	.....	.....	.....	.....	1,185,000	.....	.....	1,398,000	14,150,000	.....	.....	.....
1929	.....	.....	.....	.....	946,000	.....	.....	2,137,000	10,037,000	.....	.....	.....
1930	.....	.....	.....	.....	806,000	.....	.....	1,503,000	6,176,000	.....	.....	.....
1931	.....	.....	.....	.....	675,000	.....	.....	694,000	3,301,000	.....	.....	.....
1932	.....	.....	.....	.....	570,000	.....	.....	369,000	1,387,000	.....	.....	[G]560
1933	.....	.....	.....	.....	453,000	.....	.....	255,000	1,149,000	.....	.....	[G]11,654
1934	.....	.....	.....	.....	484,000	.....	.....	155,000	1,052,000	[G]676	.....	.....
1935	.....	.....	.....	.....	602,000	.....	[G]79,688	190,000	962,000	.....	.....	.....
1936	[G]500	[G]3,000	[G]1,000	[G]6,000	[G]565,000	[G]40,000	[G]1,217,000	[G]239,000	[G]838,000	.....	.....	.....
1937	[G]36,000	[G]471,000	.....	[G]423,000	[G]565,000	[G]150,000	[G]1,966,000	[G]217,000	[G]904,000	.....	[G]68,000	.....
Sub-total	36,500	474,000	1,000	429,000	77,778,782	190,000	3,262,688	14,649,000	123,155,337	996	68,000	30,374
1938 (5 months)	[G]92,961	[G]271,402	.....	[G]241,185	[G]183,668	[G]162,215	[G]500,377	[G]77,435	[G]333,383	.....	[G]99,700	.....
Total	129,461	745,402	1,000	670,185	77,962,450	352,215	3,763,065	14,726,435	123,488,720	996	167,700	30,374

See footnotes on page 132.

Table continued on page 132

Gulf Coast Allegiance



FRICK-REID SUPPLY CORPORATION

e to Frick-Reid Service

FRICK-REID SERVICE in the Gulf Coast area has won the respect the oil industry feels for able, dependable cooperation anywhere.

In no other industry does intelligent, aggressive, dependable supply service count for so much. And in recent years the exploration and development of deeper sands has attached new importance to Frick-Reid's insistence on Quality Products Only.

Everywhere you hear a good word for Frick-Reid Policies, Frick-Reid Service and Frick-Reid Products. On the Gulf Coast, as elsewhere, Frick-Reid Stores are alert to every opportunity for justifying such confidence.

N Pittsburgh, Pa. . . . . Tulsa, Okla.

indicating that the Gulf Coast has accounted for over 7 percent of the cumulative United States production.

The past production of the Texas-Louisiana Gulf Coast has been nearly twice that of either Roumania or Iran (Persia), about the same as that of Venezuela, not a great deal less than that of Mexico, and more than a third as large as that of Russia.

The large production of the Gulf Coast has come, moreover, from comparatively small acreage, some fields of the region having been among the most productive per acre in the United States. (The high productivity was due to the nature of the salt dome type structures, around which sands were sharply tilted, affording large output for individual wells in many cases.)

Consequently, despite relatively small areas, two fields, Spindle Top and Humble, have produced over 100,000,000 barrels each, and several others have produced around 75,000,000 barrels or more, including Conroe, Hull, West Columbia, Goose Creek, and Barbers Hill, all in Texas. The most productive up to now in Louisiana have been Jennings and Vinton, each of which has produced around 50,000,000 barrels.

In late June, this year, the Gulf Coast proper, across Louisiana and

Texas Gulf Coast Crude Oil Production, by Fields, by Years (Continued)

YEAR	Sugarland Fort Bend County	Thompsons Fort Bend County	Tomball Harris-Montgomery Counties	Turtle Bay Chambers County	Vanderbilt Jackson County	Van Vleck Matagorda County	West Beaumont Jefferson County	West Columbia Brazoria County	Withers Wharton County	Unclassified	Total Texas Gulf Coast
1893-1900	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[F]
1901	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,593,113
1902	.....	.....	.....	.....	.....	.....	.....	[A]	.....	.....	17,465,787
1903	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17,453,582
1904	.....	.....	.....	.....	.....	.....	.....	[A]	.....	.....	21,672,111
1905	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27,615,877
1906	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,449,952
1907	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,400,209
1908	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,478,515
1909	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,765,488
1910	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,800,366
1911	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,272,481
1912	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,458,506
1913	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,823,606
1914	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,615,282
1915	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17,421,894
1916	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18,297,679
1917	.....	.....	.....	.....	.....	.....	.....	[E]	.....	.....	21,477,721
1918	.....	.....	.....	.....	.....	.....	.....	[E]	.....	.....	21,422,277
1919	.....	.....	.....	.....	.....	.....	.....	5,611,000	.....	.....	21,055,310
1920	.....	.....	.....	.....	.....	.....	.....	9,459,000	.....	.....	25,721,992
1921	.....	.....	.....	.....	.....	.....	.....	12,081,000	.....	.....	34,435,000
1922	.....	.....	.....	.....	.....	.....	.....	11,126,000	.....	.....	35,379,800
1923	.....	.....	.....	.....	.....	.....	.....	5,994,000	.....	.....	30,840,091
1924	.....	.....	.....	.....	.....	.....	.....	4,536,000	.....	.....	26,098,098
1925	.....	.....	.....	.....	.....	.....	.....	4,031,000	.....	.....	29,863,000
1926	.....	.....	.....	.....	.....	.....	.....	3,197,000	.....	.....	41,060,700
1927	.....	.....	.....	.....	.....	.....	.....	3,291,000	.....	.....	46,837,001
1928	390,000	.....	.....	.....	.....	.....	.....	2,800,000	.....	.....	39,466,769
1929	3,948,000	.....	.....	.....	.....	.....	.....	2,298,000	.....	.....	47,398,652
1930	4,274,000	.....	.....	.....	.....	.....	.....	1,827,000	.....	.....	49,558,191
1931	4,216,000	808,000	.....	.....	.....	.....	.....	1,310,000	.....	.....	38,553,757
1932	3,487,000	4,201,000	.....	.....	.....	.....	.....	1,295,000	.....	.....	37,811,170
1933	2,532,000	4,906,000	233,000	.....	.....	.....	.....	[G]1,198,316	.....	.....	56,811,890
1934	2,183,000	4,245,000	990,000	.....	[G]64,575	[G]11,515	.....	1,038,000	.....	.....	53,608,216
1935	2,098,000	4,123,000	1,899,000	[G]1,680	21,110	[G]26,572	.....	857,000	.....	.....	55,396,966
1936	[G]1,724,000	[G]3,491,000	[G]2,605,000	[G]154,000	[G]26,000	[G]482,000	[G]15,000	[G]789,000	[G]228,000	.....	62,875,000
1937	[G]1,324,000	[G]4,139,000	[G]3,076,000	[G]329,000	[G]28,000	[G]666,000	[G]346,000	[G]840,000	[G]571,000	.....	73,315,000
Sub-total	26,176,000	25,913,000	8,803,000	484,680	139,685	1,186,087	361,000	73,578,316	799,000	.....	1,052,570,869
1938 (5 months)	[G]480,897	[G]1,600,007	[G]1,083,593	[G]163,471	.....	[G]303,489	[G]190,767	[G]631,084	[G]282,322	.....	[G]29,398,576
Total	26,656,897	27,513,007	9,886,593	648,151	139,685	1,489,576	551,767	74,209,400	1,081,322	.....	1,081,969,445

Notes to Texas Gulf Coast Production Tables, Pages 123-132

[A] Small production, but no record available.

[B] Small production at Big Hill (Matagorda) after 1907 included with Markham. (*Mineral Resources*, 1915, reported only one producer at Big Hill in 1915. DeGolyer and Others' *Geology of Salt Dome Oil Fields*, 1926, indicated that after 1907 Big Hill produced not over 300,000 barrels).

[C] Sour Lake and Saratoga for 1903 are estimates included in text in *Mineral Resources*, 1903.

[D] Small production at Saratoga in 1902 included with Sour Lake.

[E] Damond Mound includes production at West Columbia.

[F] No record available of first production at Sour Lake in 1893, 1894, and 1895; small production in 1896-1897 included with Corsicana; in 1898-1899 included with Nacogdoches; in 1900 included with Powell—all in East Central and East Texas district.

[G] From oil company records.

[H] Sunshine area, adjoining Livingston field, had small production beginning in 1930, but no records available.

[I] Based on figures compiled weekly by THE OIL WEEKLY; the yearly figures having been published originally in annual statistical issues.

[J] Estimated by THE OIL WEEKLY from statement in text of *Mineral Resources*, 1908, Part II, p. 396.

[K] Goose Creek in 1908 obtained from figures in *Mineral Resources*, 1908, Part II, pp. 397-398.

[L] Sour Lake in 1902 includes the limited output of Saratoga and numerous other Texas districts outside Corsicana, Powell and Spindle Top.

[M] According to *Mineral Resources* of 1904, Humble produced about 2000 barrels which were not sold.

[N] Also includes estimated production of previous years marked "A".

[P] Calculated by deducting oil company figure for Barbers Hill from *Mineral Resources* totals for Goose Creek-Barbers Hill.

[Q] Figures for Raccoon Bend Shallow for 1935 also include Raccoon Bend Deep.

[R] For 1935 the figures for Allen represent all "Unclassified" production of district, embracing small and new fields for which figures are not shown.

[S] Estimated by THE OIL WEEKLY with aid of DeGolyer and Others' *Geology of Salt Dome Oil Fields*.

[T] Based on weekly reports of American Petroleum Institute, the yearly figures having been calculated by THE OIL WEEKLY and published originally in annual statistical issues.

down the Texas Coast through Matagorda County, was producing approximately 370,000 barrels of crude oil daily, out of a United States total of about 3,100,000 barrels, accounting for approximately 12 percent of the national output.

Leading fields, and their average daily production, in the week ended June 25 included the following:

Field	Barrels Production Daily
TEXAS	
Conroe	31,150
Hastings	17,300
Barbers Hill	9,300
Thompsons	9,150
Manvel	8,800
Hull	7,050
Anahuac	7,000
Tomball	6,200
Dickinson	5,750
LOUISIANA	
Jennings	19,950
Caillou Island	16,400
Lafitte	15,100
Iowa	14,350
New Iberia	14,150
Gillis	9,200
Jeanerette	6,950
East Hackberry	6,700
Bosco	6,050
Tepetate	5,700

The actual Gulf Coast production currently represents, however, only a fraction of what the region could produce, the output being under proration in both the Texas and Louisiana divisions. In the Texas portion, particularly, the wells are restricted materially, in common with the wells of all other districts of that state.

Future Production

The remarkable growth of the importance of the Gulf Coast oil region in the past 15 years strongly suggests that a further large increase in the number of oil fields still is in store.

For if history repeats itself, prospecting and drilling will be directed successfully to progressively greater depths, and many new, deeper fields will be discovered and developed.

However, even without counting the unhatched eggs, the future of the Gulf Coast as an oil-producing region is bright. The area already has enough established fields to be assured of a rating as an important source of crude oil for many years.

The district has been producing oil for over 35 years, during which it has yielded nearly a billion and a half barrels. But it ultimately will produce three times that quantity from the present known fields, or twice as much in the future as in the past, if estimates or ultimate production are fulfilled.

Output Rising

The yearly yield of crude oil in the Gulf Coast has risen sharply in recent years, and indications are that it will continue to do so.

In 1934 the annual recovery of the Texas Gulf Coast was slightly over 53,500,000 barrels. It attained a peak of 62,875,000 barrels during the year 1936, and then jumped to 73,315,000 barrels during 1937.

Louisiana Gulf Coast's production history is very similar, except on a sharper increase. Since 1921 its annual output has risen from 2,000,000 barrels to a total of 61,864,000 barrels in 1937. Its output was 15,306,000 barrels in 1933; 23,794,000 barrels in 1934; 41,152,481 barrels in 1935; and 53,574,000 barrels in 1936.

Louisiana Gulf Coast Crude Oil Production, by Fields, by Years

Complete Production History of District, in Barrels of 42 U. S. Gallons

(Sources. — Except as otherwise indicated in footnotes, figures are from annual volumes of *Mineral Resources* and *Minerals Yearbook.*)

YEAR	Abbeville	Anse La Butte	Bateman Lake	Bayou Blue	Bayou Bouillon	Bayou des Allemands	Bayou Mallet	Bayou St. Denis	Bayou St. Elaine	Big Lake	Black Bayou	Bosco	Caillou Island	Cameron Meadows
	Vermillion Parish	St. Martin Parish	St. Mary Parish	Iberville Parish	St. Martin Parish	St. Charles Parish	Acadia Parish	Jefferson Parish	Terrebonne Parish	Cameron Parish	Cameron Parish	Acadia-St. Landry Parishes	Terrebonne Parish	Cameron Parish
1904	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1905	.....	9,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1906	.....	25,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1907	.....	60,385	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1908	.....	145,805	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1909	.....	37,930	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1910	.....	44,018	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1911	.....	62,411	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1912	.....	25,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1913	.....	6,612	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1914	.....	18,623	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1915	.....	20,982	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1916	.....	12,818	.....	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....
1917	.....	4,900	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1918	.....	3,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1919	.....	.....	.....	.....	[A]	.....	.....	.....	.....	.....	.....	.....	.....	.....
1920	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1921	.....	47,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1922	.....	36,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1923	.....	18,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1924	.....	12,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1925	.....	17,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1926	.....	17,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1927	.....	17,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1928	.....	16,000	.....	.....	205,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
1929	.....	14,000	.....	[B]6,523	72,000	.....	.....	.....	.....	.....	[B]26,037	.....	.....	.....
1930	.....	9,000	.....	[B]25,368	78,000	.....	.....	.....	.....	.....	177,000	.....	[B]6,005	.....
1931	.....	12,000	.....	[B]48,834	15,000	.....	.....	.....	.....	.....	477,000	.....	.....	[B]20,154
1932	.....	11,000	.....	[B]1,891	.....	.....	.....	.....	.....	.....	353,000	.....	.....	[B]23,063
1933	.....	[B]12,253	.....	.....	.....	.....	.....	.....	.....	.....	292,000	.....	362,000	[B]43,700
1934	.....	[B]13,363	.....	.....	.....	.....	.....	.....	.....	.....	422,000	1,036,000	1,784,000	419,000
1935	.....	[B]17,415	.....	.....	.....	.....	.....	635,000	.....	.....	564,000	6,355,000	3,288,000	1,046,000
1936	.....	[B]22,000	.....	.....	[B]13,000	.....	[B]56,000	[B]2,374,000	.....	[B]6,000	[B]1,088,000	[B]4,577,000	[B]5,146,000	[B]1,829,000
1937	16,000	[B]67,000	[B]2,000	[B]2,000	[B]1,000	[B]37,000	[B]64,000	[B]4,149,000	[B]50,000	[B]38,000	[B]1,302,000	[B]3,008,000	[B]6,410,000	[B]1,486,000
Sub-total	16,000	834,515	2,000	84,616	384,000	37,000	120,000	7,158,000	50,000	44,000	4,701,037	14,976,000	16,996,005	4,866,917
1938 (5 mos.)	[B]79,909	[B]36,040	[B]64,061	[B]975	.....	[B]14,346	[B]13,566	[B]2,371,824	[B]13,057	[B]14,337	[B]565,395	[B]919,667	[B]2,722,473	[B]594,424
Total	95,909	870,555	66,061	85,591	384,000	51,346	133,566	9,529,824	63,057	58,337	5,266,432	15,895,667	19,718,478	5,461,341

See footnotes on page 135.

Table continued next page

Louisiana Gulf Coast Crude Oil Production, by Fields, by Years—(Continued)

YEAR	Cankton St. Landry Parish	Charenton St. Mary Parish	Cheneyville Rapides Parish	Choctaw Iberville Parish	Creole Cameron Parish	Darrow Iberville Parish	Dog Lake Terrebonne Parish	Edgerly Calcasieu Parish	Fausse Pointe Iberia Parish	Four Isle Terrebonne Parish	Garden Island Plaquemines Parish	Gibson Terrebone Parish	Gillis Calcasieu Parish
1913								[A]					
1914								586,376					
1915								1,403,030					
1916								1,252,538					
1917								805,609					
1918								512,458					
1919								361,000					
1920								379,000					
1921								250,000					
1922								125,000					
1923								157,000					
1924								166,000					
1925								185,000					
1926								207,000					
1927								467,000	[B]7,710				
1928								358,000	[B]4,100				
1929							[B]2,837	245,000					
1930							[B]88	161,000					
1931				104,000				109,000					
1932				146,000		[B]805		63,000					
1933				100,000		[B]7,583		50,000					
1934				324,000		[B]3,854		65,000		[B]20,412			[B]48,362
1935			[B]8,919	276,000		263,000	[B]34,395	80,000		[B]216,700	[B]85,974		2,204,000
1936		[B]19,000	[B]165,000	[B]352,000		[B]527,000	[B]274,000	[B]70,000		[B]51,000	[B]322,000		[B]5,669,000
1937	11,000	[B]233,000	[B]99,000	[B]440,000		[B]717,000	[B]674,000	[B]61,000	1,000	[B]2,000	[B]608,000	425,000	[B]5,087,000
Sub-total	11,000	252,000	272,919	1,742,000		1,519,242	985,320	8,119,011	12,810	290,112	1,015,974	425,000	13,008,362
1938 (5 months)	[B]4,420	[B]308,445		[B]177,612	[B]15,311	[B]38,383	[B]304,880	[B]25,411		[B]517	[B]380,223	[B]414,664	[B]1,395,973
Total	15,420	560,445	272,919	1,919,612	15,311	1,557,625	1,290,200	8,144,422	12,810	290,629	1,396,197	839,664	14,404,335

YEAR	Gueydan Vermilion Parish	Hackberry Old Cameron Parish	Hackberry East Cameron Parish	Horse Shoe Bayou St. Mary Parish	Iowa Calcasieu-Jefferson Davis Parishes	Jeanerette St. Mary Parish	Jennings Acadia Parish	Lake Barre Terrebonne Parish	Lake Hermitage Plaquemines Parish	Lake Long La Fourche Parish	Lake Pelto Terrebonne Parish	Lake Washington Plaquemines Parish	Leesville La Fourche Parish	Lirette Terrebonne Parish	Lockport Calcasieu Parish
1901															
1902							548,617								
1903							892,609								
1904							2,923,066								
1905							8,891,416								
1906							9,025,174								
1907							4,842,520								
1908							5,111,577								
1909							1,966,614								
1910							1,625,159								
1911							1,180,177								
1912							1,105,711								
1913							790,648								
1914							412,036								
1915							434,815								
1916							516,674								
1917							399,469								
1918							369,499								
1919							347,000								
1920							232,000								
1921							254,000								
1922							191,000								
1923							204,000								
1924							213,000								128,000
1925							278,000								471,000
1926							342,000								1,343,000
1927			[B]41,925				299,000								2,038,000
1928		[B]5,400	[B]627,372				250,000								1,445,000
1929		[B]806,564	[B]838,099				515,000	46,000			[B]31,597				1,369,000
1930		[B]426,543	[B]610,703				495,000	388,000			[B]56,290				1,131,000
1931		[B]255,995	[B]1,394,871		[B]34,265		169,000	1,021,000			[B]30,346	39,000	154,000		1,906,000
1932	195,000	[B]198,375	[B]2,055,539		489,000		332,000	2,722,000			[B]20,727	152,000	273,000		989,000
1933	165,000	[B]212,848	[B]1,771,407		3,396,000		400,000	3,021,000			[B]17,432	154,000	359,000		938,000
1934	110,000	[B]193,057	[B]1,728,788		5,300,000		444,000	1,894,000	[B]74		[B]1,258	368,000	4,487,000		714,000
1935	82,000	[B]165,735	[B]2,425,928		7,363,000	[B]2,814	686,000	2,792,000	[B]70,850		[B]113,563	500,000	[B]4,912,285		655,000
1936	[B]60,000	[B]189,000	[B]2,917,000		[B]6,569,000	[B]1,000,000	[B]796,000	[B]2,809,000	[B]24,000		[B]154,000	433,000	[B]5,287,000		[B]474,000
1937	101,000	[B]1,379,000	[B]3,247,000	75,000	[B]6,338,000	[B]2,272,000	[B]2,969,000	[B]1,370,000	[B]16,000	[B]83,000	[B]314,000	[B]435,000	[B]2,665,000	[B]26,000	[B]515,000
Sub-total	713,000	3,832,517	17,658,532	75,000	29,489,265	3,274,814	50,451,781	16,063,000	110,924	83,000	739,213	2,081,000	18,137,285	26,000	14,116,000
1938 (5 mos.)	[B]66,927	[B]450,804	[B]1,143,056	[B]60,007	[B]2,380,658	[B]1,075,128	[B]2,699,680	[B]336,163	[B]4,598	[B]92,461	[B]179,124	[B]160,687	[B]836,495	[B]24,248	[B]152,992
Total	779,927	4,283,321	18,801,588	135,007	31,869,923	4,349,942	53,151,461	16,399,163	115,522	175,461	918,337	2,241,687	18,973,780	50,248	14,268,992

Mineral Resources

Figures on Hackberry including Old and East Hackberry

Year	Bbls. Prod
1927	42,000
1928	1,149,000
1929	1,783,000
1930	1,213,000
1931	1,399,000
1932	2,149,000
1933	1,938,000
1934	1,911,000
1935	2,580,000
Total	14,164,000

See footnotes on page 135.

Table continued next page

Louisiana Gulf Coast Crude Oil Production, by Fields, by Years—(Continued)

YEAR	New Iberia Iberia Parish	North Crowley Acadia Parish	Port Barre St. Landry Parish	Potash Plaquemine Parish	Quarantine Bay Plaquemine Parish	Raceland La Fourche Parish	Roanoke Jefferson Davis Parish	St. Martinsville St. Martin Parish	Sorrento Ascension Parish	South Crowley Acadia Parish	South Elton Jefferson-Davis Parish	South Roanoke Jefferson-Davis Parish	Starks Calcasieu Parish	Sulphur Calcasieu Parish
1917	24,894													
1918	9,621													
1919	[D]5,000													
1920	[D]2,000													
1921														
1922														
1923														
1924														
1925														
1926														[B]1,000
1927													262,000	[B]30,900
1928									389,000				186,000	890,000
1929	[B]1,850		33,000						110,000				170,000	1,374,000
1930	[B]2,497		970,000						30,000				206,000	1,362,000
1931			450,000						53,000				260,000	567,000
1932			577,000						13,000				289,000	822,000
1933			956,000						15,000				328,000	910,000
1934	[B]63,720		937,000				241,000		[B]10,449				262,000	1,256,000
1935	[B]558,637		1,250,000				1,631,000	[B]31,502	[B]46,397				195,000	944,000
1936	[B]2,387,000		[B]858,000				[B]2,261,000	[B]303,000	[B]134,000				[B]183,000	[B]1,759,000
1937	[B]6,232,000	[B]26,000	[B]619,000		[B]1,000		[B]1,863,000	[B]215,000	[B]70,000		[B]5,000	[B]4,000	[B]221,000	[B]1,419,000
Sub-total	9,287,219	26,000	6,650,000		1,000		5,996,000	549,502	770,846		5,000	4,000	2,562,000	11,334,900
1938 (5 months)	[B]2,071,921	[B]118,587	227,127	433	[B]89,225	[B]74,222	[B]628,292	[B]104,545	[B]36,392	[B]1,684	[B]5,490	[B]16,688	[B]90,043	416,443
Total	11,359,140	144,587	6,877,127	433	90,225	74,222	6,624,292	654,047	807,238	1,684	10,490	20,688	2,652,043	11,751,343

YEAR	Sweet Lake Cameron Parish	Tepetate Acadia Parish	Timbalier Bay La Fourche Parish	University East Baton Rouge Parish	Venice Plaquemine Parish	Ville Platte Evangeline Parish	Valentine La Fourche Parish	Vinton Calcasieu Parish	Welsh Jefferson Davis Parish	White Castle Iberville Parish	Woodlawn Jefferson-Davis Parish	Total Louisiana Gulf Coast (By THE OIL WEEKLY)	Total Louisiana Gulf Coast (By Government Sources)
1902												548,617	548,617
1903									25,162			917,771	917,771
1904									35,892			2,958,958	2,958,958
1905									10,000			8,910,416	8,910,416
1906									23,996			9,074,170	9,074,170
1907									47,316			4,950,221	4,950,221
1908									31,555			5,288,937	5,288,937
1909									26,169			2,030,713	2,030,713
1910								26,701	54,724			1,750,602	1,750,602
1911								2,454,103	27,901			3,724,592	3,724,592
1912								932,639	22,140			2,085,490	2,085,490
1913								1,888,864	31,144			2,717,268	2,717,268
1914								1,465,302	18,629			2,500,966	2,500,966
1915								1,234,227	16,451			3,109,505	3,109,505
1916								1,640,147	4,319			3,426,496	3,426,496
1917								1,595,366				2,830,238	2,830,238
1918								1,839,083	4,540			2,738,201	2,738,201
1919								1,593,000	[D]4,000			2,309,000	2,309,000
1920								1,333,000	[D]1,000			1,947,000	1,947,000
1921								1,379,000				1,930,000	1,930,000
1922								1,395,000				1,747,000	1,747,000
1923								2,071,000				2,450,000	2,450,000
1924								1,968,000				2,487,000	2,487,000
1925								2,274,000				3,225,000	3,227,000
1926								2,215,000				4,125,000	4,140,000
1927	77,000							1,786,000				5,026,535	5,050,000
1928	661,000							1,569,000	[B]1,860			6,507,632	7,053,000
1929	93,000							1,484,000	[B]41,838	[B]16,216		7,396,561	7,454,000
1930	193,000							1,768,000	[B]56,714	300,000		8,452,208	8,610,000
1931	459,000							1,940,000	[B]6,595	329,000		9,855,060	9,560,000
1932	271,000							1,514,000	[B]14,327	200,000		11,725,727	11,616,000
1933	335,000							1,302,000	[B]14,828	192,000		15,355,051	15,306,000
1934	385,000							1,168,000	[B]11,157	191,000		23,901,494	23,794,000
1935	403,000	[B]131,764						906,000	[B]15,603	196,000		41,152,481	41,152,481
1936	351,000	[B]1,472,000					[B]500	[B]653,000	[B]12,000	[B]336,000		[B]53,981,500	53,574,000
1937	292,000	[B]2,109,000			[B]159,000	[B]7,000	[B]971,000	[B]473,000	[B]11,000	[B]493,000		[B]61,985,000	61,864,000
Sub-total	3,520,000	3,712,764			159,000	7,000	971,500	41,866,432	570,860	2,253,216		325,022,410	324,833,642
1938 (5 months)	[B]111,792	[B]840,515	[B]31,649	[B]26,218	[B]138,068	[B]161,256	[B]755,017	[B]184,122	[B]3,788	[B]222,790	[B]8,161	26,503,409	
Total	3,631,792	4,553,279	31,649	26,218	297,068	168,256	1,726,517	42,050,554	574,648	2,476,006	8,161	351,525,819	

Notes to Louisiana Gulf Coast Production Tables, Pages 133-134-135

[A] Small production, but no record available.

[B] From oil company records.

[C] DeGolyer and Others' *Geology of Salt Dome Oil Fields* (1926) indicated total output of Pine Prairie field had been around 20,000 barrels, occurring chiefly about years 1912-1914 and 1917-1918.

[D] New Iberia and Welsh in 1919 and 1920 estimated by dividing figure for "other fields" of Coastal Louisiana, as reported in *Mineral Resources.*

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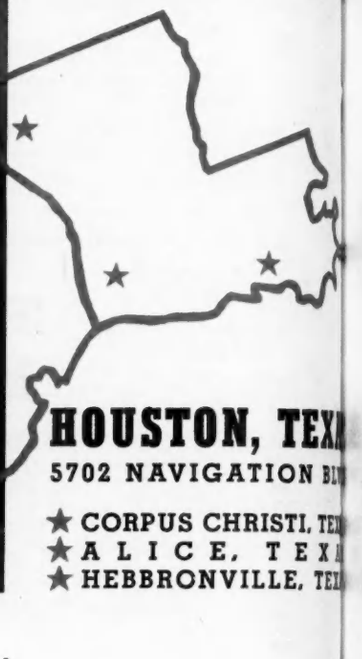

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GULF COAST OIL FIELDS
Salt Domes and Prospects

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Geological Data and Development History

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Compiled by CHARLES LEYENDECKER of THE OIL WEEKLY Staff

Acknowledgment is made to the National Oil Scouts Association of America, to the many operators and companies who have cooperated in the following compilation by making available their records and in checking the data presented.

TEXAS

AUSTIN COUNTY

CAT SPRINGS*

One mi n Cat Springs, centering around J. DeLeon Survey. **Means of Discovery:** Sun Oil Co. geological work indicated structure, 1932. Reflection seismograph did not furnish definite evidence. **Extent of Development:** Sun Oil Co.'s Theuman 1, J. DeLeon Survey, abn January, 1933, in Yegua, 4734 ft. **Principal Leaseholder:** Sun Oil Co. **Remarks:** See Milheim.

CHEEVES*

W of Brenham field, centering H. Cheeves Survey. **Means of Discovery:** Torsion balance, Sun Oil Co., 1935. **Extent of Development:** Three Cockfield tests drilled around this survey. **Principal Leaseholders:** Sun Oil Co.

HOT WELLS*

Four mi s Sealy, centering around area where San Felipe Four Leagues Survey is adjoined on south by H. & T. C., Sections 160, 161, 162, 181. **Means of Discovery:** Surface and subsurface geology; hot water from old well; several wildcats in area reported to have had oil showings. The Texas Co. did geophysical work. **Extent of Development:** Several tests, including two relatively deep. Black Hawk Oil Co.'s Lancashire 1, H. & T. C., Section 100, quit at 4250 ft, June, 1929. Gem Oil Co.'s Walter Haedge 1, Lot 1, Block 18, San Felipe Survey, tested Cockfield, quitting at 6230 ft, May, 1934; found formations high.

KENNEY*

Five mi w of Kenney, centering J. Martin, C. Benton, I. G. Belcher, B. Eaton and J. Cooper Surveys. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1934. **Extent of Development:** Several shallow wells. **Principal Leaseholder:** Shell Petroleum Corp., 3500 acres acquired in Feb., 1934. **Remarks:** S of Kenney, Gem Oil Co. drilled Klump 1, S. F. Austin Survey, 4430 ft, salt water. N of Kenney, Gulf Oil Corp., has 1200 acres which was acquired in July, 1933.

NEW ULM–INDUSTRY

Southwest of Industry, centering J. F. Pettus, O. S. Pettus and A. J. Bell Surveys. **Means of Discovery:** Surface geology; several of the principal leaseholders have worked the area with geophysics. **Extent of Development:** I. T. I. O. & Johnson Brothers' A. Wangler 1, e of New Ulm, Kuykendall Survey, dry at 4305 ft, in Cockfield, August, 1934. Arkansas Fuel Oil Co.'s Huedner 1, e of New Ulm, R. Salze Survey, quit at 4005 ft, May, 1935, salt water in Cockfield. J. S. Wheelis' Knolle 1, J. F. Pettus Survey, salt water at 3625 ft in Cockfield, September, 1935. Temple Hargrove and Cockburn's Forester 1, A. J. Bell Survey, cored sand showing oil 3692 ft, and from 3747-55 ft, dst 3755-3800 ft showed water and gas, abn 3850 ft, June, 1937. Same operators' A. M. Bartay 1, M. Stoussy Survey se of New Ulm, dry at 4004 ft, July, 1937. **Principal Leaseholders:** Temple Hargrove and Cockburn, Humble Oil & Refining Co., Magnolia Petroleum Co., Gulf Oil Corp. 3000 ac. Arkansas Fuel Oil Co. took 3500 acres in the above area in November, 1930. Ohio Oil Co.

ORANGE HILL*

East of Chesterville, Colorado County, centering F. R. Moore Survey. **Means of Discovery:** Geophysical work, Gulf Oil Corp., 1935. **Extent of Development:** Undrilled. **Principal Leaseholders:** Gulf Oil Corp. around 5000 acres acquired in Sept., 1933; Stanolind Oil & Gas Co.

RACCOON BEND

Eight mi e Bellville, 7 mi sw Hempstead. **Surveys:** W. C. White, Wm Smithers, M. R. Williams, J. P. Stephenson, T. Bell, Wm. Harvey, Chas. Donoho, J. Bardsley, A. Ives, Austin County; Jared E. Groce, Waller County; also Brazos River bed. **Discovery Means:** Gas seeps, sulphur water, paraffin dirt, broken surface. **Discovery Well:** Humble-Valley Oil Corp.'s Gutoskey 2, Jan. 15, 1928, 500 bbls, 23 gravity, 3259 ft. Valley Oil Corp.'s Thompson 1 found gas, 1000 ft, but was not completed. Humble-Valley Oil Corp.'s Walton 1 was completed as a gas well at 1000 ft, Feb. 1, 1927. **Structure:** Apparently not a regular salt dome but possibly a deep-seated dome, with fault across the dome. **Approximate Elevation:** 150-170 ft. **Producing Formations:** Commercial gas production from 1000 ft considered top of Oakville. Main oil production from Jackson (upper Eocene), occurring in Gutoskey sand, Whitsett zone, at 3100-3307 ft, and Grawunder sand, McElroy zone, at 3400-3500 ft. In 1934 oil production established in the Cockfield, upper part Claiborne series, sands between 4012 and 4152 ft. Water level for the Cockfield at minus 3992 ft. The highest well found in the Cockfield at minus 3803 ft. The producing level is approximately 200 ft below the top of Cockfield. **Average Sand Thickness:** 26 ft. **Productive Acres:** 2800. Developed, 2800. **Daily Production July 1, 1938:** 2927 bbls. **Estimated Ultimate Recovery:** 65,000,000 bbls. **Production Through June, 1938:** 19,720,679 bbls. **Indicated Remaining Reserve:** 45,279,321 bbls. **Deepest Hole:** Humble's Woodley 11-X, Wm. Harvey Survey, quit at 7068 ft Feb., 1935, in Cook Mountain; had showings of oil at 7046 to 7061 ft. **Casing Programs:** Humble, 9-in, 1140 ft; 5-in, 4040 ft. **Oil Outlets:** Humble Pipe Line Co., 8-in. **Gravity Oil:** 16-38; 3130-3250 ft, 23.7; 3980 ft, 34; 4100 ft, 38. **Rigs Running July 1, 1938:** None. **Principal Leaseholder:** Humble. **Remarks:** A modern pressure-maintenance system is used in producing from two of the sands. Gas is piped to Brenham, Hempstead, Prairie View and Navasota.

RED HILL–MILLHEIM

Six mi sw of Millheim, midway between J. S. Wheelis' Whittenburg 1, dry hole, and Quintana Petroleum Co.'s Hillboldt 1, dry hole, centering around the H.&T.C., Section 166. **Means of Discovery:** Surface geology and geophysical work by Humble Oil & Refining Co. **Extent of Development:** Undrilled. Two dry holes drilled n and s of this prospect. **Principal Leaseholders:** Humble Oil & Refining Co. (5000 acres), Gulf Oil Corp. **Remarks:** South of this prospect, centering the H.&T.C., Section 177, J. S. Wheelis' Whittenburg 1, quit at 5636 ft, Dec., 1935. This well was drilled on a torsion balance picture. North of this prospect, Quintana Petroleum Corp.'s Hillboldt 1, M. N. Allen Survey, quit in water sand at 4805 ft. W. H. Mitchel's Fenner 1, J. Fitzgibbons Sur, dry 4201 ft, February, 1937. (See Cat Springs).

SOUTH BELLVILLE*

Three mi sw Bellville, centering in nw end of Jas. Cummings Five Leagues Survey. **Means of Discovery:** Geology. **Extent of Development:** Cranfill-Reynolds Co.'s Lewis 1, Cummings Survey, quit at 4515 ft, April, 1933. Cranfill-Reynolds and Atlantic Oil Producing Co.'s Swearengen 1, C. K. Ham Survey, two months later quit at 4540 ft. Tests to around 4000 ft have been drilled also to the e, nw, and sw, within several miles of the mentioned wildcats. Deering & Kayser's McClenton 1, se of Bellville, Thos. Bell Survey, A-15, dry at 4864 ft, Sept., 1935. R. L. Hopkins and S. T. McGregor et al's Reinchel Survey, abn 5008 ft, May, 1937.

BRAZORIA COUNTY

ALLEN

S. McNeel, J. G. & G. W. McNeel, T. & W. Alley and C. G. Alsberry ½ League surveys. On Bernard River 8 mi n of coast. **Means of Discovery:** Torsion balance, Shell Petroleum Corp., 1925. **Discovery Well:** Shell's Allen Bernard River 1, May 17, 1927, 700 bbls 31 gravity oil, 5141 ft. **Structure:** Non-piercement type salt dome, top cap rock 822 ft, top salt 1380 ft. **Producing Formations:** Miocene sands, 4346 to 5584 ft. **Average Sand Thickness:** 80 ft. **Productive Acres:** 10, developed 10. **Daily Production, July 1, 1938:** 3 bbls. **Estimated Ultimate Recovery:** 100,000 bbls. **Production Through June, 1938:** 86,817 bbls. **Indicated Remaining Reserve:** 13,183 bbls. **Deepest Hole:** Roxana (Shell) Petroleum Corp.'s Poole A-2, abnd in shale 5960 ft, 1928. **Casing Program:** Mills Bennett, 13⅜-in, 1183 ft; 9⅝-in, 4850 ft. **Oil Outlet:** Barge down Bernard River. **Gravity Oil:** 28-41. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** Mills Bennett Production Co. **Remarks:** Allen dome has "mushrooming" or "overhanging" cap. **Heaving Shale:** Found under Allen & Randon tracts in Miocene

*Prospect. †Salt dome, no production. ‡Gas field.

formation. Around 280 ft of heaving shale has been penetrated. Top of heave is encountered around 5400 ft.

ALVIN*

West of Alvin and six mi s and e of Manvel field, centering J. M. O'Donnell, Section 26. **Means of Discovery:** Torsion balance, Shell Petroleum Corp., Gulf Production Co. and The Texas Co., 1935. Reflection seismograph, Humble Oil & Refining Co., Pure Oil Co., 1934-35. **Principal Leaseholders:** Humble, Pure, The Texas Co., Stanolind, Gulf, Magnolia.

ANCHOR*

Centering around the townsite of Anchor, J. W. Cloud, Wm. Parker, S. Marsh, Geo. Robinson, J. Bradley and Valderas Surveys. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1935; Atlantic Oil Co., The Texas Co., 1934. Humble Oil & Refining Co., 1933-34. Torsion balance, The Texas Co., Stanolind Oil & Gas Co. and Gulf Production Co., 1933. Refraction, Pure Oil Co., 1936. **Extent of Development:** Texas Gulf Producing Co.'s Sparks 1, Wm. Roberts sur, dr salt water sands at 3950-51 ft and 6227 to 6237 ft, June, 1936; reworked and run an electrical log, perforated with 40 shots at 5675 to 5705 ft and swabbed salt water. This well was dr in what is known as the Blue Lake area. **Principal Leaseholders:** Humble Oil & Refining Co., Sun Oil Co., Magnolia Petroleum Co., Stanolind Oil & Gas Co., Superior Oil Prod. Co., Ohio Oil Co., Navarro Oil Co., Gulf Oil Corp. **Remarks:** In the Geo. Robinson and J. Bradley Survey, Adams Louisiana Corp. worked with reflection seismograph and took 1600 acres. The above prospect ties in with the Chenango area. (See Chenango and Angleton prospects.)

ANGLETON*

Five mi e of Angleton, centering S. F. Austin, No. 2, and I. T. Tinsley Survey. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1934. **Principal Leaseholders:** Humble Oil & Refining Co., The Texas Co., Sinclair Prairie Oil Co., Navarro Oil Co., Gulf Oil Corp., Magnolia Petroleum Co., Cullen & West. **Remarks:** Luling Oil & Gas Co. acquired a 4500-acre block around the C. Smith Survey two mi sw of Angleton. Five mi e of Luling block, C. E. Holt drilled Griffith 1, Bradley Survey, to 6010 ft and was dry, April, 1935. From Bonney to Angleton, approximately 12 miles, has received attention of nearly every major oil company operating on the Gulf Coast. Leases in this area sold as high as $75 per acre. See Bonney, Chenango, Anchor prospects.

AUSTIN BAYOU

Henry Austin Survey, Abstract 10, three mi s Danbury dome. **Means of Discovery:** Torsion balance, Rycade Oil Corp. and Amerada Petroleum Corp., 1930. **Extent of Development:** Rycade and Amerada drilled Rapid City 1, 6248 ft, Aug., 1930. It failed to give encouragement for further drilling. Area was worked later by seismograph by same interests and condemned. NW of Austin Bayou, W. H. McCarthy assembled a 400-acre block upon which Pat Rutherford drilled National Life Insurance Co. 1, to 6538 ft and abnd; show of gas in Miocene.

BONNEY*

Adjoins town of Bonney on e, in S. F. Austin, No. 24 and No. 25, W. D. C. Hall and J. W. Hall Surveys. **Means of Discovery:** Reflection seismograph, Barnsdall Oil Co., 1932. Humble Oil & Refining Co., 1931-35. Gulf Production Co. worked n of this prospect with reflection seismograph and torsion balance. Stanolind Oil & Gas Co. also worked in area. **Extent of Development:** Barnsdall Oil Co. and Superior Oil Co. of California's O. D. McCann 1, Hall Survey, dry at 6865 ft, Dec., 1933.

BRYAN MOUND

Two mi sw Freeport, centering C. Ariola and J. W. Brougham Surveys. **Means of Discovery:** Elevation, gas seepage and sulphur water; reflection seismograph, The Texas Co., 1935. **Discovery Well:** The Texas Co.'s Freeport Sulphur Co. 1, 50 bbls initial through perforations 3425-35 ft, total depth 4544 ft, pb 3969 ft, July, 1935. It was later abnd. **Structure:** Salt dome, top cap rock 700 ft, top salt 1136 ft. **Producing Formations:** Miocene sands from 3425 to 3435 ft; sulphur is produced from cap rock. **Average Sand Thickness:** 8 ft. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** No estimate. **Production Through June, 1938:** Discovery produced a small amount. **Deepest Hole:** The Texas Co.'s Robbins 2, 13⅜-in, 4672 ft; 9⅝-in, 6057 ft; dr to 7530 ft, 9⅝-in split, abn Sept., 1937. **Casing Program:** The Texas Co., 18⅝-in, 602 ft; 13⅜-in, 1530 and 3990 ft; 9 and 9⅝-in, 4738 and 6447 ft. **Oil Outlet:** Two-mile line to loading rack. **Range of Gravity:** 36.6. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** The Texas Co. **Remarks:** Freeport Sulphur Co. mined sulphur since 1914. **Heaving Shale:** Is found under Freeport Sulphur and Robbins tracts. From 300 to 500 ft of Miocene heaving shale has been found below 4100 ft. Operators usually treat the shale with chemicals.

CEDAR LANE*

Centers around town of Cedar Lane; in Survey 47 (T. J. Jones), Tone and Jamison; adjacent to Brazoria County line. **Means of Discovery:** Torsion balance, Shell Petroleum Corp., 1928. **Extent of Development:** Undrilled following geophysical work; surface indications; Union Sulphur Co. previously drilled Estill (Bowie) 1 to 3500 ft, and Danciger drilled Estill (Bowie) 1 to 2050 ft. John Deering's Estill 1 showed oil, gas and salt water at 6534 ft, cored salt water sand at 6560 ft and at 6772 to 6788 ft. DST at 6772 to 6788 ft showed salt water. Drill pipe was stuck at 6868 ft in Miocene and well was shut down. Jack Frazier took well over. Hole was side tracked at 5199 ft and redrilled to 6385 ft where it was abn Dec. 5, 1937. **Remarks:** Although considered fair prospect following early geophysical work, the area did not show up so favorably in later work. The latter part of 1935, Sun Oil Co., Shell Petroleum Corp., The Texas Co., Magnolia Petroleum Co. leased acreage e of this prospect between Cedar Lane and San Bernardo in Brazoria County. Stanolind Oil & Gas Co. worked the area with torsion balance, Sept., 1935. Magnolia Petroleum Co., Sinclair Prairie Oil Co. took leases in sw corner J. Cummings Survey. The Texas Co. was active in this area, leasing several hundred acres. Strake Petroleum Corp. acquired around 10,000 acres in Nov., 1934.

CHENANGO*

Centering townsite of Chenango, around the J. Abbott, Wm. Harris, Wm. Parker Surveys. **Means of Discovery:** Reflection seismograph, Atlatl Oil Co., 1935. **Principal Leaseholders:** Gulf Oil Corp., H. G. Frost, Atlatl Oil Co., Humble Oil & Refining Co. **Remarks:** 5000 acres assembled by H. G. Frost who assigned half interest to Atlatl Oil Co. and 2100 acres to Gulf Oil Corp.

CHOCOLATE BAYOU*

S of Manvel and between Manvel and Bonney, centering around H.&T.B., Section 33, 35, and 40. **Means of Discovery:** Geophysics and surface geology. Reflection seismograph, Texas Gulf Prod. Co., 1937. **Extent of Development:** Texas Gulf's Adams 1, sec 40, Salt water sands 7189 to 7245 ft, abn 7535 ft in Frio, Sept., 1937. Ohio Oil Co.'s Kemper 1, sec 33, salt water sands 7264 to 7319 ft, abn in Frio, Sept. 1, 1937. Jack Frazier's Temple 1, salt water sands 7141 ft, abn 7515 ft in Frio formation, Sept., 1937. Prior to this development, Jack Clark's Spear 1, dry at 5163 ft, Aug., 1934, had show of oil 4251 to 4254 ft. Deep South's Demmics 1, quit at 2007 ft, June, 1937. **Principal Leaseholders:** C. B. Bunte, Ohio Oil Co., Texas Gulf, Jack Frazier. **Remarks:** Three tests were drilled on this prospect at one time. See Francis Moore prospect.

CLEMENS†

Four mi s Brazoria, R. Cummings, T. Bell, and Jno. McNeel Surveys. **Means of Discovery:** Surface geology; torsion balance, Shell Petroleum Corp., 1925. **Structure:** Salt dome. Top of cap rock 590 ft, salt 1400 ft. **Extent of Development:** Through 1935, total 15 tests, all dry. **Deepest Hole:** Roxana (Shell) Petroleum Corp.'s Pabst 2-A, abnd, Oct., 1927, 6319 ft. **Principal Leaseholders:** Shell Petroleum Corp., Jefferson Lake Sulphur Co. leased sulphur rights and has sulphur plant near the dome. Old Ocean field furnishes gas for sulphur plant.

CLUTE*

J. E. Groce Survey, two mi ne Chute. **Means of Discovery:** Seismograph, Rycade Oil Corp. and Vacuum Oil Co., 1930. **Extent of Development:** Rycade and Vacuum made location for Wisdom 1 in summer of 1930, following seismograph work which suggested presence of a salt dome. The prospect was re-worked by seismograph, however, and since that work failed to show a dome the location abnd. **Remarks:** Also referred to as Lake Jackson.

DAMON MOUND

Dome is under town of Damon, Abraham Darst, Jno. P. Mills, Damon and C. P. Patton Surveys. **Means of Discovery:** Elevation, gas seeps, and mineral waters. **Discovery Well:** Texas Exploration Co.'s Wisdom 1, Nov. 15, 1915, 100 bbls, 1953 ft. **Structure:** Piercement type salt dome, top cap rock at surface, top salt 529 ft. **Producing Formations:** At 1406 to 3800 ft, in Pliocene, Miocene, Oligocene and Lower Oligocene formations. **Average Sand Thickness:** 40 ft. **Productive Acres:** 250. **Daily Production, July 1, 1938:** 288 bbls. **Estimated Ultimate Recovery:** 10,500,000 bbls. **Production Through June, 1938:** 9,402,175 bbls. **Indicated Remaining Reserve:** 1,097,825 bbls. **Deepest Hole:** Sinclair Prairie Oil Co.'s Bryan 31-A, dry at 8112 ft in salt, Sept., 1933. Top salt 3841 ft. **Casing Programs:** Sinclair Prairie Oil Co., 13-in, 205 ft; H. Wisdom, 10-in, 21 to 46 ft; 7-in, 1380 ft. **Oil Outlets:** Sinclair Pipe Line Co., 8-in; Humble Pipe Line Co., 4-in. **Gravity Oil:** 21-33. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Sinclair, H. Wisdom. **Remarks:** Sinclair owns all minerals below 1700 ft. **Heaving Shale:** Found under Cushing, Munson, Ward, Mulcahy, Jackson, Damon and other tracts. Approximately 70 ft of black Vicksburg shale is found.

DANBURY

One mi ne of Danbury, H. T. & B. No. 13 and No. 14, S. A. Tewsey, M. Shepard, J. H. Bruner, H. Austin Leagues No. 5 and No. 6 Surveys. **Means of Discovery:** Surface indications; seismograph, Shell Petroleum Corp., 1929. **Discovery Well:** Shell's Blakely-Winston 1, H. T. & B., sec 14, swabbed oil at 1579 ft, Nov., 1929; deepened to 5221 ft; pb, and in June, 1930, swabbed 50 bbls daily, 70 percent 22 gravity oil, 30 percent b.s. and water, from 1559-1579 ft. First commercial producer, Rowan Drilling Co. and Shell Petroleum Corp.'s Jamison 1, 183 bbls daily, ¼-in choke, 1970 ft, Sept. 12, 1937. **Structure:** Salt dome, topped salt 6231 ft. **Producing Formation:** Miocene sand at 1559-1579 ft, 1946-1970 ft, 1970-2025 ft. Showings oil and gas in Frio formation at 5761-81 ft, 7168 ft. **Approximate Elevation:** 19-40 ft. **Average Sand Thickness:** 14 ft. **Productive Acres:** 75; 40 developed. **Daily Production, July 1, 1938:** 231 bbls. **Estimated Ultimate Recovery:** 500,000 bbls. **Production Through June, 1938:** 42,728 bbls. **Indicated Remaining Reserve:** 457,272 bbls. **Deepest Hole:** Shell's Haury 3, abn 7495 ft, April, 1935. **Casing Programs:** Shell Pet. Corp., 20-in 192 ft; 10-in, 660 ft; 9⅝-in, 4786 ft. Rowan Drilling Co., 10-in, 206 ft; 7-in, 1962 ft. **Oil Outlet:** Humble Pipe Line Co., 8-in line, runs near the field. **Gravity Oil:** 22-28. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Shell, Humble Oil & Refining Co., Rowan Drilling Co.

DEVILS ELBOW*

Three mi e Brazoria, S. F. Austin 5½ League Survey. **Means of Discovery:** Surface indication in form of pronounced river bend and gas seeps. Also checked geophysically, and McCollum Exploration Co., using seismograph and torsion balance, reported favorably in 1928, although it did not show up definitely as a salt dome. **Extent of Development:** No drilling has been undertaken on geophysical evidence, but Croesus Oil & Gas Co. drilled Jenkins 1 to 3050 ft and Jenkins 2 to 3500 ft.

*Prospect. †Salt dome, no production. ‡Gas field.

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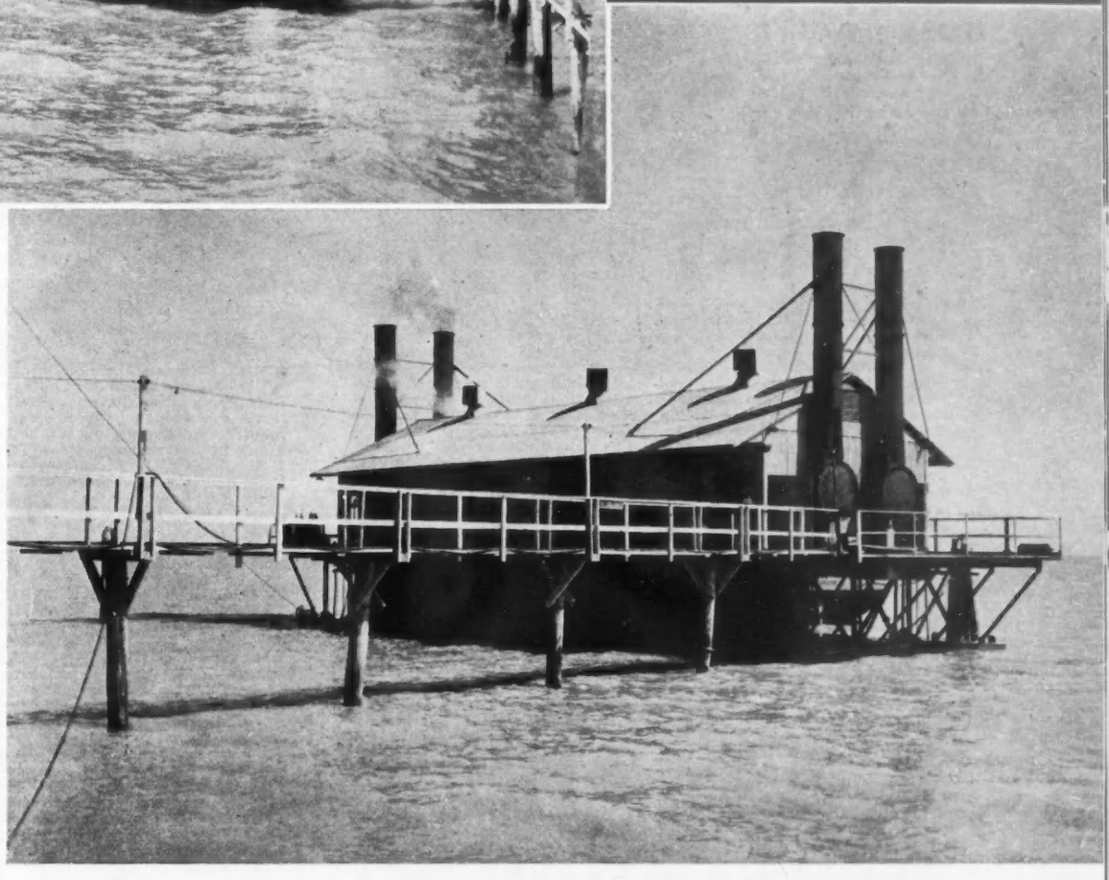


RIGHT: Boiler barge carrying four standard oil field boilers, at a safe distance from the drilling barge, yet conveniently connected by a quickly erected and dismantled foot-bridge.

The wisdom of using submergible barges in developing marine acreage is well illustrated in this Galveston Bay operation. These barges float the entire drilling rig to the water location. Patented sea-cocks are opened to sink the barge. Drilling completed, the sea-cocks are closed and water pumped out, the barge rises to surface, and floats to the next location. Expensive piling and other preliminaries to rigging up are eliminated. Drilling costs are substantially lower than by other methods. There is no pollution of waters. A single barge has drilled 19 deep wells in less than four years, including depths exceeding 12,000 feet.

We manufacture submergible barges for DRILLING RIGS, BOILERS, and PUMPING UNITS, and as of March 28, 1938, have constructed 13 twin hull drilling barges, 8 U-type drilling barges, 19 boiler and power barges, and 5 pumping unit barges.

PENNSYLVANIA SHIPYARDS, INC.

BEAUMONT, TEXAS, U. S. A.

EAGLE NEST LAKE*

South of Eagle Nest Lake, Austin Survey, three mi ne West Columbia dome. **Means of Discovery:** Surface evidence (gas in water well). Checked by geophysics, including Gulf Production Co. torsion balance in 1931. Reflection seismograph, Gulf, 1936. **Principal Leaseholders:** Gulf Oil Corp., (K. Frost in T. K. Davis Survey). **Remarks:** Gulf took big block of leases in 1932 and 1936. Most companies which have done work in area believe this is a favorable prospect.

FLAG POND*

Northwest of Wild Peach and between Pledger and Old Ocean fields, centering B. C. Franklin, J. Walker & Border and Z. Phillips Surveys. **Means of Discovery:** Reflection seismograph and torsion balance by nearly all major leaseholders. **Extent of Development:** Undrilled. **Principal Leaseholders:** Humble Oil & Refining Co., Texas Co., Sun Oil Co., Shell Petroleum Corp., Skelly Oil Co., Harrison & Abercrombie.

FRANCIS MOORE*

Six mi sw Alvin, centering the Francis Moore Survey. **Means of Discovery:** Reflection seismograph, Stanolind Oil & Gas Co., Pure Oil Co., Humble Oil & Refining Co., Sun Oil Co., 1934-35. **Extent of Development:** Undrilled. **Principal Leaseholders:** Humble Oil & Refining Co., Gulf Oil Corp., Sterling Oil & Refining Co., Magnolia Petroleum Co., Stanolind Oil & Gas Co. **Remarks:** North of Liverpool and s of Alvin. See Chocolate Bayou and Bonney.

HALLS BAYOU*

Asa Bringham Survey, nine mi se Alvin. **Means of Discovery:** Torsion balance, Humble Oil & Refining Co., 1928. Seismograph did not show dome. **Extent of Development:** A. H. Parsons et al's J. D. Hughes 1, A. L. D. Lewis Survey, abnd, shale 4254 ft, Jan., 1933.

HASTINGS

Five mi n Alvin, centering A. C. H. & B., sec 1 and 2, H. & T. B., secs 28, 29, 30, 35, 36, and 37, Perry & Austin, Wm. Snyder, BBB&C, R. A. McGee, B. T. Masterson, Wm. Henry, S. McKissick, R. Hoppel, A. H. Jackson, H. Stevens. **Means of Discovery:** Torsion balance, spring of 1934, Stanolind Oil & Gas Co. Later checked by seismograph reflection by the same company. Standard Oil Co. of Kansas reflection seismograph, 1934. **Discovery Well:** Stanolind's J. W. Surface 1, 120 bbls 38 gr oil, 3,000,000 cu ft gas daily, Dec. 23, 1934. Sands from 5975 to 5985 ft. Later carried to 6003 ft, came in for 240 bbls daily. Due to mechanical difficulties the well was carried down to 6154 ft and tested salt water. It was finally completed at 6118 ft for an oil producer, May, 1935. **Structure:** Non-piercement type salt dome with a considerable amount of faulting. **Approximate Elevation:** 32-55 ft. **Producing Formations:** Lower Marginulina-Frio sands at 5188-6140 ft. Gas sand, 2930 ft. **Average Sand Thickness:** 400 ft. (Some portions of the field have over 1000 ft of sand; thickest in the Gulf Coast.) **Productive Acres:** 5000; 4000 developed. **Daily Production, July 1, 1938:** 18,295 bbls. **Estimated Ultimate Recovery:** 400,000,000 bbls. **Production Through June, 1938:** 12,500,420 bbls. **Indicated Remaining Reserve:** 387,499,580 bbls. **Deepest Hole:** Stanolind's Sneed 4, dry in Vicksburg at 8793 ft, Dec., 1935. **Casing Programs:** Stanolind, 16-in, 90 ft; 10-in from 1600 to 1670 ft; 7-in from 5600 to 6050 ft. Humble Oil & Refining Co., 9-in, 1200 to 1500 ft; 5½-in from 5800 to 6100 ft. **Oil Outlets:** Stanolind Pipe Line Co., 6-in looped line, ties into main 12-in trunk line to Texas City to Pan American refinery. Capacity of 6-in line, 25,000 bbls daily. Pan American Pipe Line Co.'s 8-in welded line to Texas City. Capacity 20,000 bbls. **Gravity Oil:** All sand show 30 to 33 gravity oil. **Rigs Running, July 1, 1938:** Eight. **Principal Leaseholders:** Stanolind, Humble, Navarro Oil Co. **Remarks:** Water level was found in the discovery well at 6154 ft but later established at 6140 ft. Hastings has one of the thickest sand bodies of any field in the Gulf Coast. The field was originally allowed one well to 10-acre spacing but Showers and Moncrief showed that two different sands existed on the northwest side and was allowed to drill twin wells on 10-acre tracts. Allowable is set by acreage and potential factor.

HOSKINS MOUND

Eight mi se Danbury, Henry Austin and J. J. Calvington Surveys. **Means of Discovery:** Surface elevation, gas seeps, and sulphur water. **Discovery Well:** First well in area, drilled by Mound Oil Co. in 1904, yielded gas at 585 ft. **Structure:** Salt dome, top cap rock 623 ft, top salt 1150 ft. **Producing Formations:** Oil from sands around 600 ft, sulphur from cap rock. **Productive Area:** Only a few acres. **Production Through June, 1938:** 32,000 bbls (abn). **Daily Production, July 1, 1938:** None. **Range of Gravity:** 21.5 degrees. **Rigs Running, July 1, 1938:** None. **Remarks:** Mound Oil Co. from 1904 to 1907 drilled 13 wells which during that period produced approximately 30,000 bbls of oil. Commercial sulphur production was started in May, 1925, by Freeport Sulphur Co. on leases in which The Texas Co. owns an interest; and the field continues as strictly a sulphur field.

JULIFF*

West of Juliff and centering around Francis Bingham survey. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholders:** Humble Oil & Refining Co., Gulf Oil Corp.

LIVERPOOL*

North of Liverpool, centering Angier, Bradley, Hall and S. F. Austin 1¾ Leagues. **Means of Discovery:** Refraction seismograph, The Texas Co.; reflection seismograph, Sun Oil Co., Stanolind Oil & Gas Co., 1934-35. Humble Oil & Refining Co. and Pure Oil Co. have worked in the general area with geophysical instruments. **Principal Leaseholders:** Mid-Tex Oil Co., The Texas Co., Gulf Oil Corp., and Sun Oil Co. **Remarks:** Liverpool and Southwest Alvin prospects closely associated.

*Prospect. †Salt dome, no production. ‡Gas field.

LOCHRIDGE

Near Lochridge, centering around J. W. Hall and Thos. Alsberry Surveys. **Means of Discovery:** Torsian balance, first by Gulf Production Co., 1929; later by Quintana Pet. Co., and Humble Oil & Refining Co. **Discovery Well:** Gulf Oil Corp.'s Wilkes & Smith 2-A, Nov. 9, 1936, 18 bbls per hour, 3/16-in choke, 26.9 gr oil, TP 1175 lbs, CP 1700 lbs, 6366 ft. (See Gulf's Fairfield 1 under remarks.) **Structure:** Probably deep seated faulted salt dome. **Approximate Elevation:** 50 to 60 ft. **Producing Formations:** Frio and Oligocene at 6309 to 6378 ft. **Average Sand Thickness:** 30 ft. Gas/oil contact 6296 ft, oil/water contact 6325 ft. Bottom-hole pressure at 6300 ft, 2875 lbs; porosity 30 percent. **Productive Acres:** 1000; 600 developed. **Daily Production, July 1, 1938:** 1210 bbls. **Estimated Ultimate Recovery:** 15,000,000 bbls. **Production Through June, 1938:** 508,508 bbls. **Indicated Remaining Reserve:** 14,491,492 bbls. **Deepest Hole:** Gulf's Great Southern 1, w side of field, abn 9684 ft, Jan., 1938. **Casing Programs:** Gulf Oil Corp., 10 or 13⅜-in, 1300 ft; 7-in, 6340 ft. Shell Pet. Corp., 10-in, 1400 ft; 7-in, 6340 ft. **Oil Outlet:** Gulf Pipe Line Co., 4-in. **Gravity Oil:** 6370 ft, 26. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Gulf Oil Corp., Shell Petroleum Corp., Kirby Pet. Co., Dr. C. M. Lusk. **Remarks: Heaving shale** is found below 7500 ft. Prior to discovery, these 11 wells were drilled. Six in Brazoria and five in Fort Bend. All unproductive commercially, but all proved higher than normal structurally and several had promising showings. Gulf Production Co.'s American National 1, Bradley Survey, quit in shale at 6695 ft, Jan., 1933. W. D. Southerland et al's G. W. Chapman 1, Robinson Survey, had oil shows at 3280 and 5225 ft before quitting at 5787 ft, Feb., 1933. Quintana Petroleum Co. and Humble Oil & Refining Co. jointly drilled three tests on Fort Bend County side of Brazos River, in Robertson Survey. Great Southern 1 set casing to test Marginulina at 6285-6320 ft, showed gas pressure as high as 1250 lbs and yielded little oil, but failed to produce commercially, and drilled deeper, quitting at 8128 ft, Dec., 1933. The same operators' G. L. Wood et al 1 quit at 6300 ft, Jan., 1934; and Wood 2 showed little oil and gas at 6305 ft, abnd 6377 ft, March, 1934. Turnbull & Irwin's Sutherland Buck 1, A. Robinson Survey, cored salt water sand in Marginulina from 6340 to 6345 ft, and quit at 6510 ft, Dec., 1934. Quintana Petroleum Co.'s G. L. Wood 1, Alberry Survey, quit at 6461 ft, 1935. Gulf Production Co.'s Wilkes & Smith 1, J. W. Hall Survey, quit at 6647 ft, Jan., 1936. Had slight showing of oil in Frio topped at 6273 ft. The showing was around 6330 ft. Salt water sand was found from 6425 to 6479 ft. Gulf Production Co.'s Fairfield 1, 4750 ft n of Wilkes & Smith 1, A. Robeson Survey, showed 85 bbls 42 degree gr oil, March 20, 1936, 6276 ft. Started making salt water; was drilled to 8585 ft, tested salt water, plugged back and made gas well 6267 ft. Some consider this as the discovery well.

LOCKWOOD*

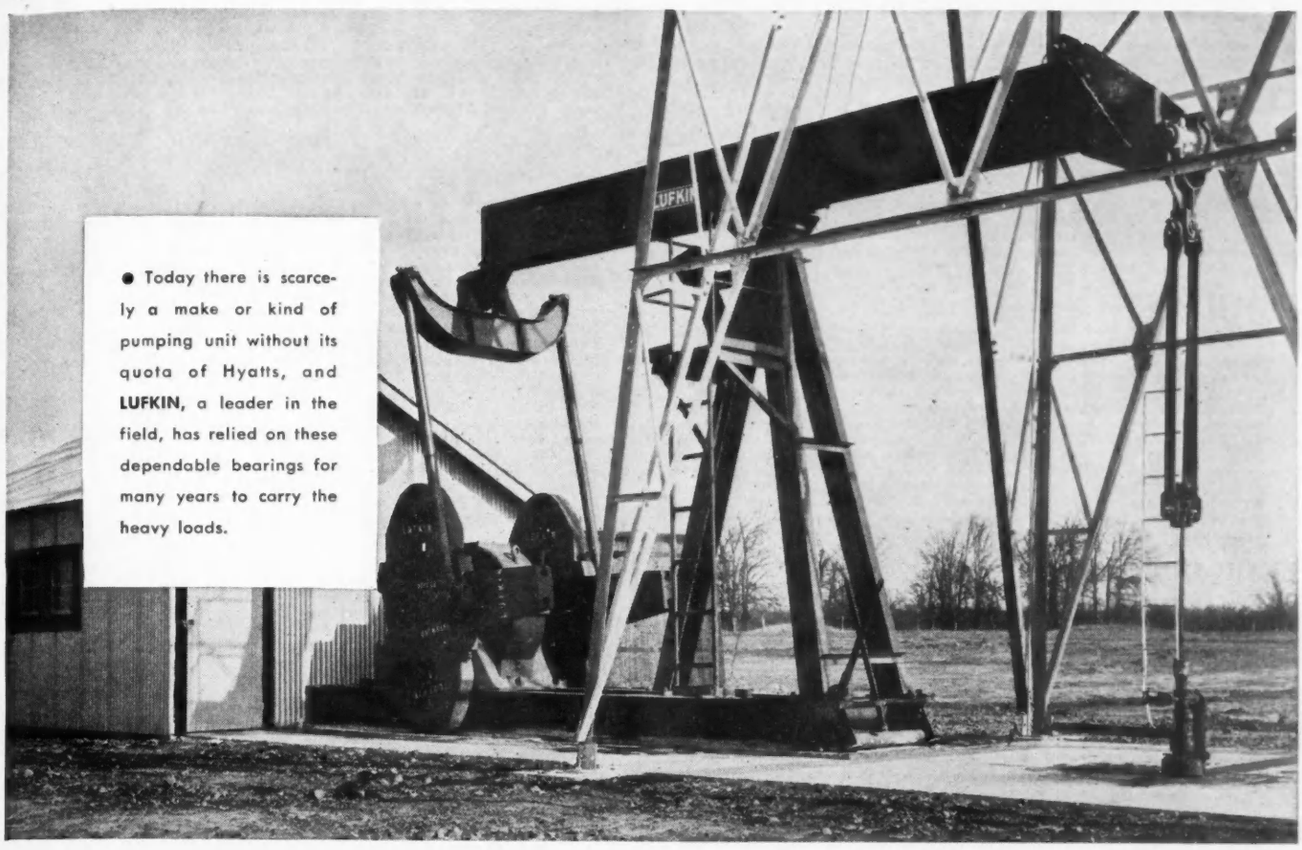
Midway between Damon Mound and West Columbia salt domes, Wiley Martin and J. Thompson Surveys. **Means of Discovery:** Gulf Production Co. and Humble Oil & Refining Co. found promising evidence by geophysics about 1932. **Extent of Development:** Gulf Production Co.'s Lockwood 1, Wiley Martin Survey, abnd in water sand 7405 ft, January, 1933. R. R. Osburne's J. L. Jones 1, J. Thompson Survey, abnd location, January, 1936. **Principal Leaseholders:** Gulf Oil Corp. and Humble Oil & Refining Co. have extensive leaseholds. R. R. Osburne acquired 4000 acres, April, 1935.

MANVEL

Two mi ne Manvel in E. and Harry Little, Thos. Spraggin, H. & T. B. Sec. 23 and 24, A. C. H. & B. Sec. 91 and 92, C. O'Donnell Surveys. **Means of Discovery:** Surface geology; torsion balance, The Texas Co., 1929; seismograph also confirmed a deep dome. **Discovery Well:** The Texas Co.'s Belcher 1, Sept. 9, 1931, 85 bbls 28 gravity oil per hour through 62/64-in choke from sand at 5463-5481 ft. **Structure:** No cap rock or salt encountered; regarded, however, as deep seated non-piercement type salt dome. **Approximate Elevation:** 54-64 ft. **Producing Formations:** Oil from Miocene sands at 3871-4152 ft. Gas sand at 3686 ft. From Marginulina zone of middle Oligocene at 5080-5770 ft. Deep test yielded non-commercial gas from McElroy formation (Jackson) at 7450-7590 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 1900; 1800 developed. **Daily Production, July 1, 1938:** 8810 bbls. **Estimated Ultimate Recovery:** 50,000,000 bbls. **Production Through June, 1938:** 12,488,973 bbls. **Deepest Hole:** Texas Co.'s C. W. Massey 1, quit at 7957 ft in Jackson, Dec. 1934. **Casing Programs:** The Texas Co., 16-in, 45 ft; 10-in, 500 to 1110 ft; 5 or 7-in at 4100 to 5600 ft. **Oil Outlet:** The Texas Pipe Line Co., 8-in line Houston ship channel, capacity 25,000 bbls daily. **Range of Gravity:** 24-30 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** The Texas Co. controls the majority of the acreage. Bowles & Borsodi (farm out of Pure Oil Co.), Turnbull & Irwin, Windsor Oil Co., Uscan Oil Co., Harrison & Abercrombie, Gulf Oil Corp., Sterling Oil & Refining Co., Burton Dr. Co. **Remarks:** Bowles & Borsodi's Morvel 1, n flank test, extended Marginulina production and was the discovery well for this formation on the n side of the field; came in for 18 bbls per hour from sands at 5617 to 5630 ft. One well is dr to each 10 acres. Gas/oil ratio per well is 2000 to 1.

OLD OCEAN

Two mi nw of Sweeney, centering C. Breen and Chance & Polley Surveys. **Means of Discovery:** Reflection seismograph, Harrison & Abercrombie, spring of 1934. **Discovery Well:** Harrison & Abercrombie's Bernard River Land Co. 1, 512 bbls, 22 percent salt water, 8651 ft, Nov. 8, 1934. **Structure:** Regarded as deep seated salt dome. **Approximate Elevation:** 30-40 ft. **Producing Formations:** Frio formation, Lower Oligocene, sands 8634-51 ft; 9835-54 ft; 9934-63 ft; 9990-10,063 ft; 10,263-293 ft; 10,395-401 ft; 10,470-480 ft; 10,635-670 ft. **Average Sand Thickness:** 200 ft. (Field has around 1000 ft of broken formations showing oil and gas.) **Productive Acres:** 4000; 1500 developed. **Daily Production, July 1, 1938:** 4210 bbls. **Estimated Ultimate Recovery:** 100,000,000 bbls. **Production Through June, 1938:** 1,357,163 bbls. **Indicated Remaining Reserve:** 98,642,847 bbls. **Deepest Hole:** Harrison & Abercrombie's Copland 1, 5-in, 11,000 ft, tested salt water 11,128 ft; pb and comp 10,670 ft, Jan., 1938. **Casing Programs:** 20-in, 40 ft;



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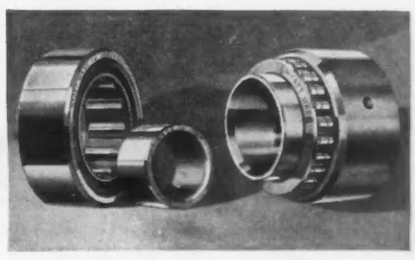

13-in, 1450 ft; 9-in, 6500 ft; 7-in, 10,004, 10,415, and 10,751 ft. Three strings of casing are required, which includes a conductor string set at least 1400 ft below the surface and cemented to the surface. An intermediate string 6500 ft long is required, which must be set with 250 sacks of cement. The oil string must be set with 400 sacks of cement. Another unusual regulation which is required is the installation of a 6000-lb test back-pressure valve above the kelly joint after drilling operations are begun below the intermediate string of casing. The well fittings are 10,000-lb test. **Oil Outlets:** Texas Pipe Line Co., 6-in; Harrison & Abercrombie, 6-in gas line to Clemens. **Gravity Oil:** 8630 ft, 68; 9800 to 10,670 ft, 52-55. **Rigs Running, July 1, 1938:** Three. **Principal Leaseholder:** Harrison & Abercrombie. **Remarks:** The deepest producing field in the Texas Gulf Coast and one of the deepest in the world. State regulations require 40-acre spacing. Wells have working pressures as high as 3600 lbs and shut-in pressures as high as 4700 lbs.

PEACH POINT*

Between Allen and Stratton Ridge, centering around C. Hugely 1000-acre tract in the S. F. Austin 7½ Leagues A-20. **Means of Discovery:** Old shallow wells drilled on surface indications, had oil and gas showings. Seismograph showed favorably. Detailed reflection seismograph, Pure Oil Co., 1935 and 1936. **Extent of Development:** Humble Oil & Refining Co. and others drilled shallow wells. Pure Oil Co.'s Slade 1 had heaving shale 7842 ft, tried to blow out at 7478 to 7530 ft, cored heaving shale 8161 ft, set 7-in csg, abn 8397 ft, Sept., 1937. Same operator's Smith 1 encountered heaving shale and was abn at 9830 ft, March, 1938. State Prison Farm 1, M. S. Caldwell sur, abn 6788 ft, May, 1938. **Principal Leaseholders:** Pure Oil Co., Gulf Oil Corp., Boone Brothers. **Remarks:** Pure Oil Co. acquired around 6000 acres in this area in Jan., 1935. **Heaving Shale:** Is found under Slade tract.

PEARLAND*

Two mi se of Pearland, centering around sw corner W. D. C. Hall, T. J. Green and Hunter Surveys. **Means of Discovery:** Torsion balance, 1928, Humble Oil & Refining Co., The Texas Co., Gulf Oil Corp. Worked again by torsion balance, 1933, Cullen & West. **Extent of Development:** Westlen Petroleum Co.'s Settegast 1, quit at 6297 ft, March, 1934. Albert Plummer's Street 1, logged salt water sands in Frio, dry at 6357 ft, March, 1938. Well was 600 to 700 ft high structurally and carried over 500 ft of salt water sand. Sam Dunnam's Settegast 1, T. J. Green Survey, top salt water sand 6224 ft, dry at 6543 ft, March, 1938. It was lower than Albert Plummer's well. Pearland Oil Co. has made lcn for W. S. Craig 1 in H. T. & B. sur Sec 1. **Remarks:** See Friendswood.

PLEDGER

Three mi se Pledger, W. Carson, Grey & Moore, D. McNeel Surveys. **Means of Discovery:** Reflection seismograph and torsion balance, Petty Geophysical Engineering Corp., J. P. Hunnicutt, H. H. Stevenson, Pierce Withers, June, 1932. **Discovery Well:** Danciger O&R Co.'s W. S. Hunt 1, Dec. 2, 1932, 200 bbls 58 gravity distillate and 12 million ft gas daily through three quarter-inch choke from 6760-6782 ft. **Type Structure:** Evidence of salt dome by geophysics, but no cap rock or salt in tests drilled. **Approximate Elevation:** 45-65 ft. **Producing Formations:** Sands, 6580-6610 ft; 6751 to 6875 ft in Marginulina zone of middle Oligocene. On the west and sw flanks of the field, Marginulina sands found at 6567 to 6684 ft. **Average Sand Thickness:** 100 ft. **Productive Acres:** 160. **Daily Production, July 1, 1938:** Gas. **Estimated Ultimate Recovery:** Gas. **Production Through June, 1938:** 17,000 bbls (no oil prod). **Deepest Hole:** Danciger's W. S. Hunt 2 went to 8061 ft in Vicksburg, was pb and completed at 6752 ft, Oct., 1933. **Casing Programs:** Danciger Oil & Refining Co., 12-in, 1150-1250 ft; 7 or 7⅝-in, 6750-6935 ft. Humble Oil & Refining Co., 16-in 69 ft; 10¾-in, 1845 ft; 7-in, 6550-6670 ft. **Oil Outlets:** Only gas is piped out. Distillate carried out in tank cars. **Gravity Oil:** 55.8. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Danciger (2600 acres), Humble Oil & Refining Co. **Remarks:** Indication of sub-surface "high" first found by torsion balance, Rycade Oil Corp., 1925. Rycade took leases, assigned half interest to The Texas Co., and the latter drilled four core tests 1927, dropping leases on account of their indicated negative results. Humble Oil & Refining Co. also did some core drilling in area in 1925. A gasoline absorption plant is maintained by Humble Oil & Refining Co.

POOLE RANCH*

Centering W. Eggers, W. Harding and L. E. Parker Surveys. **Means of Discovery:** Reflection seismograph, Strake Petroleum Corp., 1934. **Extent of Development:** Strake Petroleum Corp.'s Poole 1, stuck drill stem at 6642 ft, fsh several weeks, set 9⅝-in csg at 6739 ft. Well blew out making gas and hot salt water July 6, 1936. It was killed and shut in at 7506 ft. Later abn at that depth. Strake Pet. Corp.'s G. T. Sargent 1, 4000 ft sw of Poole 1, set 9⅝-in csg at 6751 ft, dr to 9503 ft, abn, March, 1937. **Principal Leaseholder:** Strake Petroleum Corp., 10,000 acres.

RATTLESNAKE MOUND*

Ten mi se Liverpool. Centering around Alfred Swingle, L. G. Bachelor, Jno. Reed. B. B. B. & Co., and adjacent surveys, and extending into Chocolate Bay. **Means of Discovery:** Elevation above surrounding marshes, gas seeps, sulphur water. Several old wildcats reported oil and gas shows. Several companies worked with geophysics. In 1932 Cockburn Oil Corp., using torsion balance, found evidence of large, deep salt dome; and then, with reflection seismograph, confirmed that evidence. Amerada Petroleum Corp. checked prospect by reflection seismograph. Gulf, 1936. **Structure:** Geophysical data indicate deep seated salt dome of exceptionally large area, possibly 15,000 acres or more. **Extent of Development:** Amerada's Houston Farms 1 quit 7663 ft, April, 1935; gas show 6986 to 7003 ft; trouble with heaving shale. Amerada's Houston Farms 2, 1½ mi w of No. 1, dry at 5701 ft, Aug., 1935. **Principal Leaseholders:** Cockburn Oil Corp. had lease on the 40,000-acre Houston Farms Development Co. ranch under which a large part of the prospect lies. Amerada in 1934 selected 7000 acres out of the 40,000-acre block, and also leased 6000 acres of state submerged land in Chocolate Bay, West Bay, and Halls Lake. Gulf Oil Corp. took geophysical option in 1936 on Houston Farms Development Co.'s acreage and exercised option on 5700 acres for cash and well. **Remarks:** M. V. Bowles acquired 20,000 acres Nov., 1935, for four months exploratory work. **Heaving Shale:** Found under Houston Farms tract around 7500 ft in Discorbis formation.

SANDY POINT

Two mi ne of Sandy Point, centering around D. Talley Survey, Abst 130. **Means of Discovery:** Reflection seismograph and torsion balance, Stanolind Oil & Gas Co., 1933-36. **Discovery Well:** Henry De Arman's Fite 1, Jan. 27, 1937, 47 bbls, 39.7 gr oil daily, from perforated csg 6489 to 6501 ft. **Type Structure:** Deep seated salt dome, but no domal material has been encountered. **Approximate Elevation:** 50-70 ft. **Producing Formations:** Marginulina-Frio sands of Oligocene at 6450 to 6501 ft. **Average Sand Thickness:** 12 ft. **Productive Acres:** 1100; 200 developed. **Daily Production, July 1, 1938:** 326 bbls. **Estimated Ultimate Recovery:** 6,000,000 bbls. **Production Through June, 1938:** 105,725 bbls. **Indicated Remaining Reserve:** 5,894,275 bbls. **Deepest Hole:** Discovery well, drilled to 7013 ft, pb. **Casing Programs:** H. S. DeArman, 10¾-in, 1026 ft; 6-in, 6611 ft; perforated, 5½-in, 6488 ft. Stanolind Oil & Gas Co., 13⅜-in, 90 ft; 9-in, 1000 ft; 5-in, 6498 ft. **Oil Outlet:** Sinclair Prairie Pipe Line Co., 4-in. **Gravity Oil:** 39.7 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Stanolind Oil & Gas Co., Henry De Arman, Bunte Oil & Gas Co., Jack Frazier, Sun Oil Co., Shell Pet. Corp. **Remarks:** The discovery well came in making gas and distillate through a ¼-in choke with tubing pressure 2100 lbs and casing pressure 850 lbs. Later the well started flowing pipe line oil. C. B. Bunte promoted the first test.

SOUTH PEACH POINT*

South of Peach Point, centering Wm. Dobie Survey. **Means of Discovery:** Torsion balance and reflection seismograph, United Production Co., 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** United Production Co.

SOUTHWEST ALGOA*

Four mi sw Algoa, centering H. & T. B. Sections 6 and 7. **Means of Discovery:** Torsion balance, Embry & Bruner, 1934. **Extent of Development:** Glenn L. Bruner's (Gillock Petroleum Co.) F. Truska 1, quit at 7874 ft in Heterostegina formation, Nov., 1934, gas show around 4200 ft. Big Creek Oil Co.'s F. Truska 1-B, dry 6001 ft in Miocene, May, 1935. Beaty, Bowles & Borsodie's Truska 1, e of Big Creek's dry hole, set 9-in csg at 6430 ft, dr to 10,083 ft, pb to 5612 ft, perforated csg in Miocene, which showed 9 ohms on electrical logging device, from 5573-92 ft, DST showed salt water, abn March, 1937. Truska 1, was the third well in Texas Gulf Coast to be drilled below 10,000 ft. It was considered a high well until it cut a fault. **Principal Leaseholder:** Embry & Bruner. **Remarks:** 3500-acre block assigned to Big Creek Oil Co.

STRATTON RIDGE

Seven mi se Angleton, centering the J. E. Groce, T. W. Grayson, A. Calvit, and Austin and Williams Surveys. **Means of Discovery:** Surface elevation, gas seeps, and sulphur water. **Discovery Well:** Freeport Sulphur Co.'s Dannenbaum 1, May 12, 1922, 150 bbls, 4346 ft. **Structure:** Salt dome; several false caps; top salt around 1300 ft. **Producing Formations:** Miocene sands at 4300-4500 ft. **Productive Area:** About 20 acres. **Deepest Hole:** Rycade Oil Corp. and Amerada Petroleum Corp.'s Seaburn 2, abnd May, 1931, 7624 ft in Marginulina. **Production Through June, 1937:** 12,200 bbls (field is abnd). **Daily Production in January, 1937:** None. **Oil Outlet:** Tank cars. **Range of Gravity:** 32.5. **Rigs Running, January 1, 1937:** None. **Principal Leaseholders:** Rycade and Amerada jointly; Gulf Oil Corp., Empire Gas & Fuel Co., Freeport Sulphur Co. **Remarks:** In 1930 salt found at a relatively shallow depth off the east flank of the dome as previously outlined gave indication that twin domes exist or that the salt plug is a large saddle type dome. **Heaving Shale:** Is found under Seaburn tract around 4700 ft.

VELASCO*

East of Velasco, centering around F. J. Calvit League. **Means of Discovery:** Geophysics, Gulf Oil Corp., Humble Oil & Refining Co., Magnolia Petroleum Co. **Extent of Development:** Undrilled. **Principal Leaseholders:** Gulf, Humble, Magnolia.

WEST COLUMBIA

Adjoins town of West Columbia on northwest, Geo. Tennille, M. Varner, and J. H. Bell Surveys. **Means of Discovery:** Surface elevation and gas seeps. **Discovery Well:** Tyndall-Wyoming Oil Co.'s Hogg 1, Sept. 7, 1915, 6 bbls, 2900 ft. **Structure:** Piercement type salt dome, top cap rock 700 ft, top salt 800 ft. **Producing Formations:** At 600-1300; 2661-3250; 3850-3975; 5270-5290 and 5494-5600 ft; 5900-5913 ft in Miocene, Oligocene, Lower Oligocene (Frio) and Vicksburg formations. **Approximate Elevation:** 35-55 ft. **Average Sand Thickness:** 250 ft. **Productive Acres:** 600; 500 developed. **Daily Production, July 1, 1938:** 4470 bbls. **Estimated Ultimate Recovery:** 100,000,000 bbls. **Production Through June, 1938:** 81,082,457 bbls. **Indicated Remaining Reserve:** 18,917,542 bbls. **Deepest Hole:** The Texas Co.'s Phillips 7, G. Tennille Survey, dry at 6377 ft, April, 1938. **Casing Programs:** The Texas Co., 16-in, 48 ft; 10-in, 1200 ft; 5 or 7-in, 3800 to 5500 ft. Sterling Oil & Refining Co., 10-in, 1150 ft; 7-in 5270 to 5900 ft. **Oil Outlets:** Humble Pipe Line Co., 8-in; Texas Pipe Line Co., 8-in; Sinclair Pipe Line Co. **Gravity Oil:** 2700 ft, 20; 5500 ft, 28. **Rigs Running, July 1, 1938:** Five. **Principal Leaseholders:** The Texas Co., Humble Oil & Refining Co., Gulf Oil Corp., Sinclair Prairie Oil Co., Miramar Corp, Sterling Oil & Refining Co. **Remarks:** Ranks as a leader among Gulf Coast fields in recovery per acre. **Heaving Shale:** Is found under the Hogg, Masterson, and Smith tracts in Miocene and Vicksburg formations. It is found from 2600 to 3300 ft and from 5165 to 5650 ft. One well penetrated over 1100 ft of heaving shale. Sterling Oil & Refining Co. discovered deep Frio oil

*Prospect. †Salt dome, no production. ‡Gas field.

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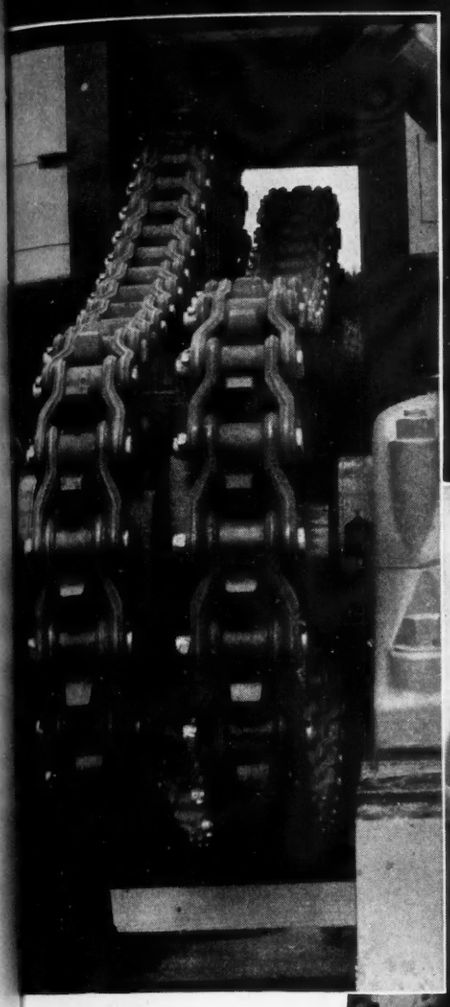

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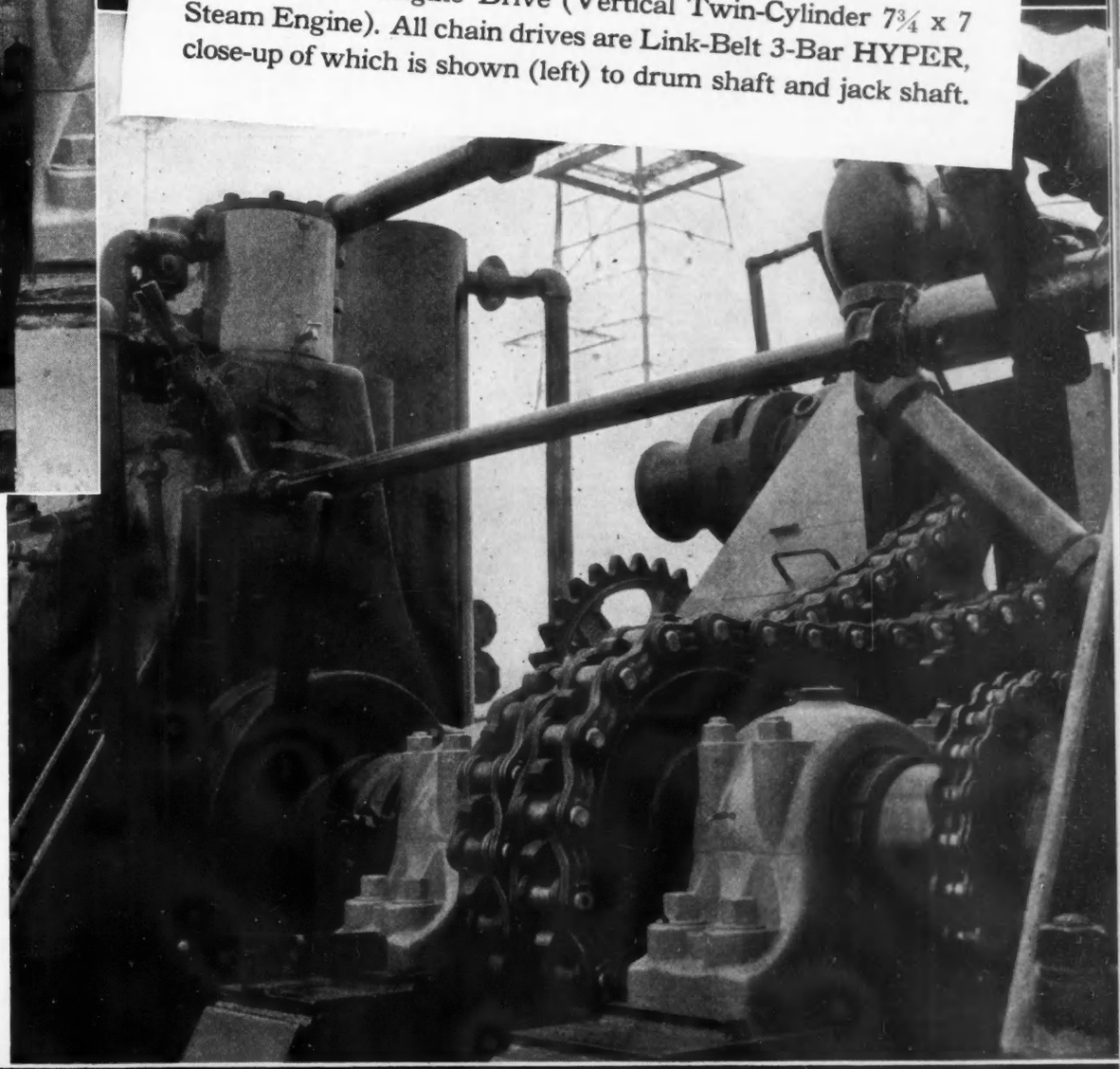

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WILD PEACH*

East of Old Ocean field and s of West Columbia, centering around the Wild Peach Subdivision in Block 19 of S. F. Austin 7 1/3 Leagues. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1935. Stanolind Oil & Gas Co. worked with torsion balance. The Texas Co. has done work in this area. **Principal Leaseholder:** The Texas Co.

CHAMBERS COUNTY

ANAHUAC

Six mi e of Anahuac, H. & T.C. Sections 44, 46, 47, 48, 50, 51, 52, 53, 56, 57, 58, 59, 60, 63, 64, and J. McGahey Survey. **Means of Discovery:** Torsion balance, reflection seismograph, Humble Oil & Refining Co., 1932 and 1934. Shell Petroleum Corp., Sun Oil Co., Yount-Lee Oil Co., Pure Oil Co., Amerada Petroleum Corp. did geophysical work in the area the latter part of 1934. **Discovery Well:** Humble's A. Middleton 1, March 3, 1935, 5 bbls per hour, large gas volume, 7050 ft; later drilled to 7088 ft, came in for 11 bbls per hour 35.6 gravity oil, no salt water, March 16, 1935. **Structure:** Regarded as a deep seated salt dome, influenced by major faulting; no dome material has been encountered. **Producing Formations:** Marginulina and Frio, Oligocene series; oil and gas sands from 7000 to 7136 ft; few wells low on structure which carry salt water in Frio, sometimes have Marginulina sands from 6940-7080 ft; gas sands from 5284 to 5286 ft and 6704-48 ft and 6978 ft; water level found around 7144 ft. **Approximate Elevation:** 20-35 ft. **Average Sand Thickness:** 80-100 ft. **Productive Acres:** 6500; 4500 developed. **Daily Production, July 1, 1938:** 7262 bbls. **Estimated Ultimate Recovery:** 300,000,000 bbls. **Production Through June, 1938:** 8,710,965 bbls. **Indicated Remaining Reserve:** 291,289,035 bbls. **Deepest Hole:** Gulf Oil Corp.'s Knowles 1, cut fault, quit at 8749 ft, in Frio, Nov., 1935. **Casing Programs:** Humble, 9-in, 1030 ft; 5½- or 5-in, 7045 ft. Sun, 16-in, 90 ft; 10-in, 1350 ft; 7-in, 7040 ft. Gulf, 10-in, 2000 ft; 5- and 7-in, 7040 ft. **Oil Outlets:** Humble Pipe Line Co., 6-in oil line and 8-in gas line. Gulf Pipe Line Co., 4-in. **Gravity Oil:** 33-38 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Humble controls over 85 percent of the field; R. A. Mason and Glenn H. McCarthy, Sun, Gulf. **Remarks:** The major discovery in 1935. Lord 1 discovered Marginulina sand 7046-66 ft. One well is drilled to each 20 acres and wells are 466 ft from the lease line and 933 ft apart. Allowable is based on acreage and potential with a maximum of 25 acres to any one well. No well is allowed to produce more than 2000 cu ft of gas per barrel of oil.

BARBERS HILL

Centers around town of Mount Belview, H. Griffith, Wm. Hodge, Wm. Bloodgood and W. D. Smith surveys. **Means of Discovery:** Pronounced mound at surface, gas seeps, paraffin dirt, and sulphur water. **Discovery Well:** Gulf Production Co.-Humble Oil & Refining Co.'s Chambers County Agricultural Association 4, April 16, 1916, 40 bbls 1571 ft. **Type Structure:** Salt dome, top cap rock 350 ft, top salt 1000 ft. **Producing Formations:** Small production from considerable number of oil wells completed in cap rock and Pliocene-Miocene sands at 800 to 2200 ft; Miocene and Middle Oligocene sands at practically all depths between 3450 and 5703 ft; at 5960-6182 ft; half dozen oil wells from Frio at 6320-6690 ft; one well yielded little oil from Lower Oligocene at 7130-7296 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 450. **Daily Production, July 1, 1938:** 9196 bbls. **Estimated Ultimate Recovery:** 80,000,000 bbls. **Production Through June, 1938:** 62,764,313 bbls. **Indicated Remaining Reserve:** 17,235,687 bbls. **Deepest Hole:** Yount-Lee Oil Co.'s Chambers County Agricultural Association 4, abnd 8150 ft in McElroy, Sept., 1929. **Casing Programs:** Sun Oil Co., 24-in, 161 ft; 7-in, 4900 to 5400 ft. Texas Gulf Producing Co., 7-in, 5200 ft. Sinclair, 20-in, 60 ft; 7- or 9⅝-in, 4700 to 5545 ft. **Oil Outlets:** Humble Pipe Line Co., 8-in; Texas Pipe Line Co., 6-in; Sun Pipe Line Co., 6-in; Sinclair Prairie Pipe Line Co., 4-in; Atlantic Pipe Line Co., 6-in. **Range of Gravity:** 24-32 degrees. **Rigs Running, July 1, 1938:** Three. **Principal Leaseholders:** Texas Gulf Producing Co., Mills Bennett Production Co., Humble, Gulf Oil Corp., Stanolind Oil & Gas Co., Sun Oil Co., Sinclair Prairie Oil Co., The Texas Co., Republic Production Co., McAlbert Oil Co., Superior Oil Co., D. B. McDaniels, Rio Bravo Oil Co. **Remarks:** On nearly all sides the salt dome flares out at the top, giving a mushroom-like effect, and wells drill through "overhang" of the cap rock and salt, back into sedimentary formations, and are completed as oil producers. **Heaving Shale:** Found under Means, Woodward, Fisher, Scott, and Chambers County Agricultural Association tracts in Vicksburg, Jackson, and Frio formations. From 230 to 400 ft of shale has been penetrated. Top of heave around 5200 ft.

CEDAR BAYOU

West of Cotton Lake, centering around C. Smith Survey. **Discovery Means:** Reflection seismograph, Ingot and Merit Oil Co., 1937. Geophysics by other companies. **Discovery Well:** Ingot and Merit Oil Co.'s Wright 1, Dec. 20, 1937, 27 bbls, 39 gravity oil daily, ¼-in choke, from perforations at 6390 to 6392 ft. Well was later abnd. **Type Structure:** Dome. **Approximate Elevation:** 23-43 ft. **Producing Formations:** Sand showing oil in Marginulina 6390 to 6392 ft. **Average Sand Thickness:** No estimate. **Productive Acres:** 20. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** 50,000 bbls. **Production Through June, 1938:** 680 bbls. **Indicated Remaining Reserve:** 49,320 bbls. **Deepest Hole:** Discovery well to 7515 ft. **Gravity Oil:** 39 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Ingot and Merit Oil Co., Atlantic Refining Co., Humble Oil & Refining Co.

*Prospect. †Salt dome, no production. ‡Gas field.

CEDAR POINT

One mi offshore of Cedar Point in Galveston Bay, centering around tracts 95 and 118. **Means of Discovery:** Torsion balance, Salt Dome Oil Corp. and Standard Oil Co. of Texas, 1934 to 1936. Reflection seismograph, 1937. The whole bay was surveyed. **Discovery Well:** Standard Oil Co. of Texas and Salt Dome Oil Corp.'s State 1, Jan. 12, 1938, 647 bbls 36.2 gravity oil daily, ¼-in choke, 6030 ft. **Type Structure:** Believed to be deep seated salt dome but no domal material has been encountered. **Approximate Elevation:** 23 ft (derrick floor). **Producing Formations:** Frio sands 5956 to 6003 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 500; 100 developed. **Daily Production, July 1, 1938:** 299 bbls. **Estimated Ultimate Recovery:** 36,000,000 bbls. **Production Through June, 1938:** 39,679 bbls. **Indicated Remaining Reserve:** 35,960,331 bbls. **Deepest Hole:** Humble's State 3-95, dry at 6528 ft, June, 1938. **Casing Programs:** Standard Oil Co. of Texas, 24-in, 77 ft; 16-in, 270 ft; 10-in, 1880 ft; 7-in, 5955 ft. Humble Oil & Refining Co., 24-in, 78 ft; 16-in, 240 ft; 10-in, 1781 ft; 7-in, 6000 ft. **Oil Outlets:** Humble Pipe Line Co., 8-in to shore, Standard of Texas barges oil out. **Gravity Oil:** 36.2 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Salt Dome Oil Corp. and Standard Oil Co. of Texas, 50-50 basis; Humble Oil & Refining Co. **Remarks:** First oil field in Bays.

COTTON LAKE

Three mi s of Barbers Hill, centering around the J. Townsend and Ben Wenfree Survey. **Means of Discovery:** Reflection seismograph and torsion balance, Glenn H. McCarthy, Atlantic Refining Co., 1936. Geophysical work by Humble Oil & Refining Co., Salt Dome Oil Corp., Gulf Oil Corp. **Discovery Well:** Glenn H. McCarthy's Kilgore 1, August 8, 1936, 118 bbls per day, ¼-in choke, 6308 ft. Gas/oil ratio was 55,000 to 1 and discovery was killed. Second test showed 206 bbls daily. **Type Structure:** Possibly deep seated faulted salt dome. **Approximate Elevation:** 35-55 ft. **Producing Formations:** Marginulina-Frio sands at 6277 to 6345 ft. Gas sand 6250 ft, salt water sand 6345 ft. **Average Sand Thickness:** 12 ft. **Productive Acres:** 1000; 500 developed (includes South Cotton Lake). **Daily Production, July 1, 1938:** 1363 bbls. **Estimated Ultimate Recovery:** 6,000,000 bbls (includes South Cotton Lake). **Production Through June, 1938:** 619,023 bbls. **Indicated Remaining Reserve:** 5,380,977 bbls. **Deepest Hole:** McCarthy's Pitt 1, 2 mi north of discovery, dry in Frio at 8006 ft. **Casing Programs:** Glenn H. McCarthy, 10¾-in, 1156 ft; 5½- or 7-in, 6200 to 6300 ft. **Oil Outlet:** Sun Pipe Line Co., 4-in. **Gravity Oil:** 29.6 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Glenn H. McCarthy, Texas Crusader Oil Co., Humble Oil & Refining Co. **Remarks:** Glenn H. McCarthy sold the major portion of this field to Texas Crusader Oil Co. in 1937.

COVE*

Chas. Tilton, B. S. and Ben Winfree and W. H. Hodges surveys, three mi se Barbers Hill dome. **Means of Discovery:** Seismograph, Pure Oil Co., 1930. **Extent of Development:** Pure Oil Co.'s Kirby 1, Chas. Tilton Survey, abnd in shale, 6669 ft, July, 1930. Slight show of oil around 5920 ft. **Principal Leaseholder:** Gulf.

DOUBLE GUM ISLAND*

Five mi e Hankamer field, F. W. Plummer Survey No. 28. **Means of Discovery:** Geophysical prospect, Yount-Lee Oil Co., 1932. **Extent of Development:** Yount-Lee Oil Co. Plummer 1, F. W. Plummer Survey No. 28, Chalmers County, quit in shale at 9334 ft early 1933, setting a depth record for the Gulf Coast at that time. E. W. Boyt 1, one mi n of Plummer 1, H. & T. C. Section 17, Liberty County, abnd in lower Jackson at 9863 ft, Sept., 1933. Latter test was reported to have gas showings around 9500 ft s of the above two tests. C. B. Bunte's Simon 1, T. & N. O. Section 33, abnd at 7788 ft in Frio, Sept., 1935. **Remarks:** Sometimes referred to as Plummer. (See Winnie). **Heaving Shale:** Is found in Jackson formation.

JACKSON RANCH*

Ten mi s Anahuac. Centering around eastern portion Jno. S. Roberts and R. Barrow surveys. **Means of Discovery:** Geophysics, Humble Oil & Refining Co., Pure Oil Co., 1929. **Extent of Development:** Mills & Jones' Gau 1, ne corner Roberts Survey, reached 5626 ft before quitting Nov., 1933. Black Gold Petroleum Co.'s Barrow 1, R. Barrow Survey, show oil 7016-20 ft, dr salt water sands 8663 ft, abnd March, 1936. A. A. Cameron's White 1, Canada Ranch area, S. Brill Survey, cored salt water sands 6447 ft, 8445-50 ft, abnd 8505 ft, April, 1938. **Remarks:** Sometimes referred to as Double Bayou. Black Gold Petroleum Co. acquired around 3000 acres in this area in Sept., 1935. Gulf Oil Corp. has acreage in the Roberts and Johnson surveys. Adjoining the above surveys on e, Humble Oil & Refining Co. took a block of 10,000 acres in Brill, Trimble and Bryan surveys. This acreage was formerly held by Sun Oil Co. Salt Dome Oil Corp. has acreage in the area.

LOST LAKE

Five mi e Barbers Hill dome and 7 mi nw of Anahuac, centering E. H. R. Walls Survey. **Means of Discovery:** Gas seeps, seismograph, Pure Oil Co., 1927. Dome had been indicated previously as a minimum by Roxana (now Shell) Petroleum Corp., in 1925, but that company condemned the prospect after a 3700-ft test slightly north of the dome failed to give encouragement. **Discovery Well:** Pure Oil Co.'s Mayes 1, March 30, 1929, gas well, 2701 ft. Mayes 2 was discovery oil well, August 1, 1929, flowing 200 bbls 23 gravity oil daily at 2748-82 ft. **Type Structure:** Salt dome, top cap rock 3272 ft, top salt 5430 ft. This dome has the greatest thickness of cap rock known along the Gulf Coast. **Producing Formations:** Marginulina-Frio (lenticular) around 2700 to 2800 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 85. **Daily Production, July 1, 1938:** 122 bbls. **Estimated Ultimate Recovery:** 1,500,000 bbls. **Production June, 1938:** 913,922 bbls. **Indicated Remaining Reserve:** 586,078 bbls. **Deepest Hole:** Pure Oil Co.'s Lost Lake 5, abn Feb., 1931, 7461 ft in cap rock which was logged first at 5136 ft. **Casing Programs:** Pure Oil Co., 18⅝- or 20-in, 63 ft; 10¾- or 12½-in, 900 to 1200 ft; 6¼-, 6⅝-, or

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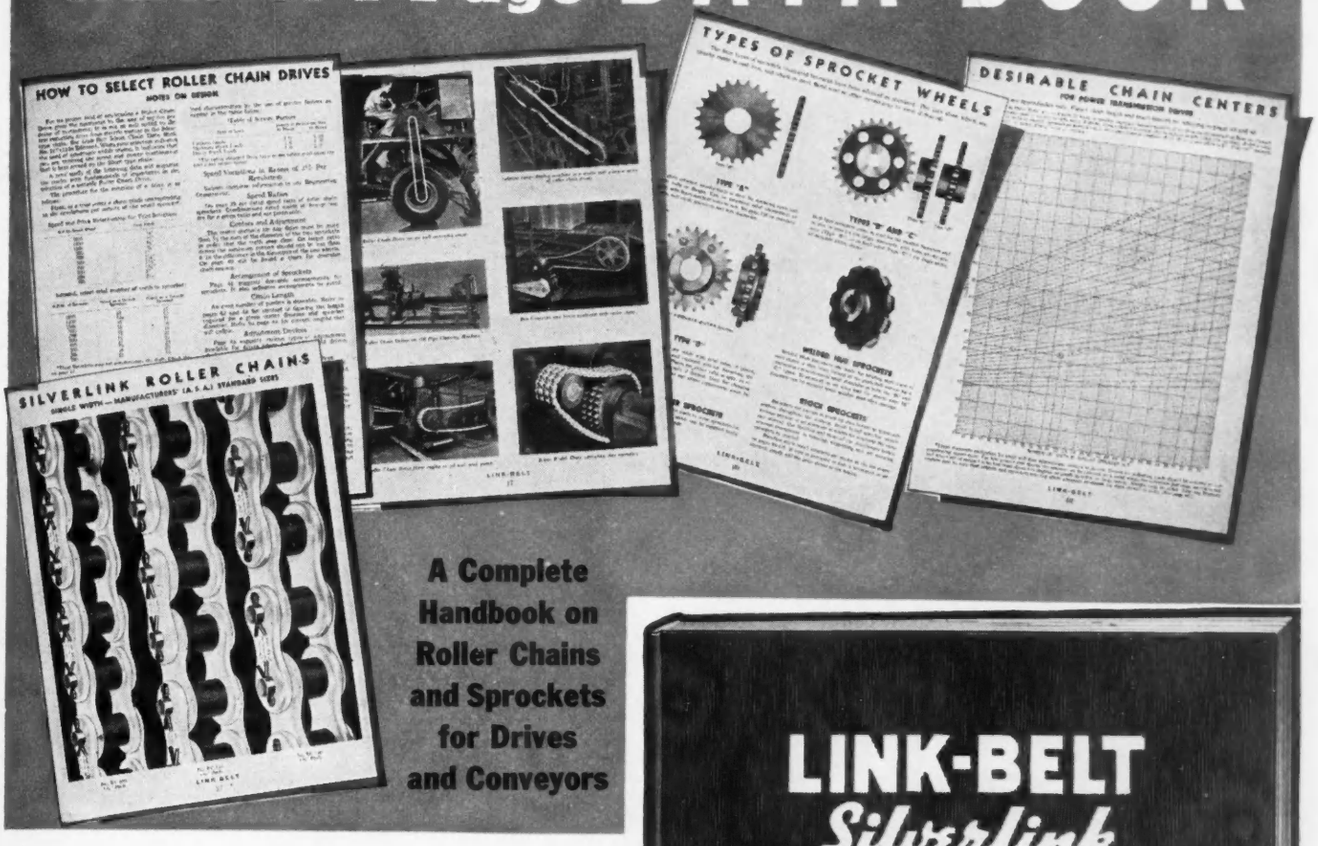
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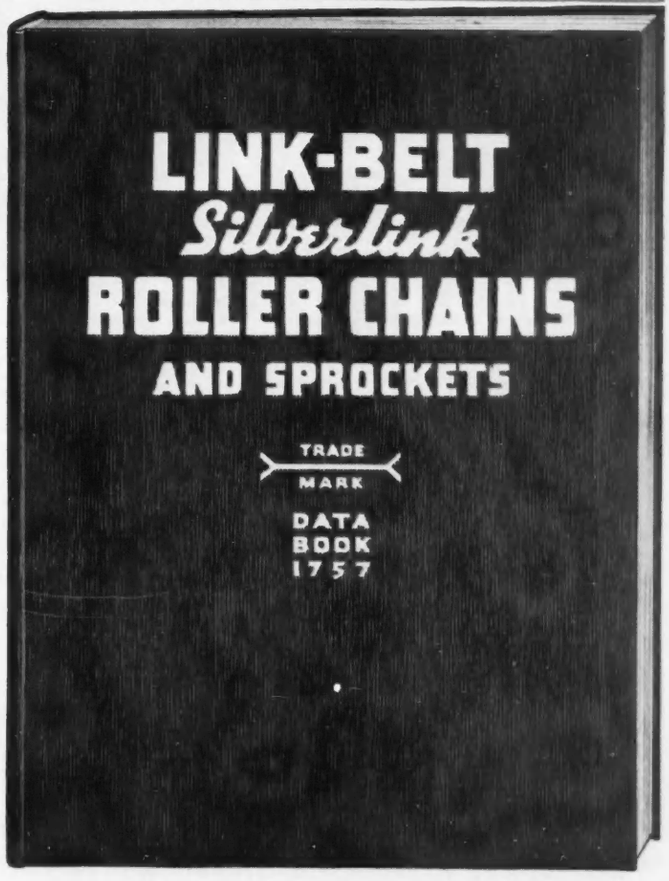

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NORTHWEST ANAHUAC*

Northwest of Anahuac, centering Luke Bryan Survey. **Means of Discovery:** Torsion balance by David B. MacDaniels, 1936 and 1937. **Extent of Development:** South Gulf Oil Corp.'s White 1, attempted drill-stem test 6805 to 6888 ft, reported oil show and salt water sand from 6788 to 6984 ft, abnd 7114 ft, June, 1935. David B. MacDaniel's Barrow 1, elevation 35 ft, topped Frio at 6974 ft, abnd 7217 ft, August, 1937. **Principal Leaseholder:** David B. MacDaniels.

OYSTER BAYOU*

Five mi w High Island, Robt. Oliver Survey. **Means of Discovery:** Seismograph, Pure Oil Co. and Rycade Oil Corp., 1929. **Extent of Development:** Pure-Rycade's Jackson 1, Robert Oliver Survey, abnd October, 1930, 6738 ft, shale; no shows. Superior Oil Co.'s H. Jackson 1, 1½ mi to east and in Levi Barrow Survey, abnd August, 1930, 4382 ft, slight oil show at 3860 ft.

ROBINSON LAKE*

South of Robinson Lake, centering William Moore Survey. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1935. **Extent of Development:** Undrilled. **Principal Leaseholder:** Sun Oil Co.

SALT CEDARS*

Thirteen mi s Anahuac field, centering T. & N. O. Sections 15, 16, 17, 18 and 19. 7½ mi w and little n of High Island field. **Means of Discovery:** Torsion balance, The Texas Co., 1928. Geophysics by Humble Oil & Refining Co., 1934. **Extent of Development:** The Texas Co.'s Jackson 1 abnd in shale, 5010 ft, Sept., 1930. **Principal Leaseholder:** Humble Oil & Refining Co. (10,000 acres). **Remarks:** This prospect and the Oyster Bayou prospect, several mi to the southeast, are regarded by some as really one. Area was worked first by Roxana (Shell) Petroleum Corp. with torsion balance and then with seismograph; and by Petty Geophysical Engineering Corp. with torsion balance. The Texas Co. dropped leases after drilling above-mentioned well.

SEABREEZE–WILLOW SLOUGH

Two mi nw of Seabreeze centering around H.T. & B. Nos. 103, 102, and 118, J. T. White, No. 128; A. Ybarbo Surveys. **Discovery Means:** Reflection seismograph and torsion balance, Sun Oil Co., 1934. Magnolia Petroleum Co. and Yount-Lee Oil Co. did geophysical work in the area. **Discovery Well:** Sun Oil Co.'s Acom 1, Nov. 18, 1936, 60 bbls 50 gravity distillate daily through a ¼-in choke, and 1,000,000 cu ft of gas at 8111 to 8190 ft. **First Oil Well:** Sun's Acom 3, H. T. & B. No. 103, 644 bbls, 21 hr, ¼-in choke, 40.5 gravity, 8415-40 ft; Nov., 1937. **Type Structure:** Probable deep-seated-faulted salt dome. **Approximate Elevation:** 10-30 ft. **Producing Formations:** Frio sands of Oligocene at 8115-40 ft; 8111-90 ft, 8415-85 ft, 8755 ft, 8850-60 ft. **Average Sand Thickness:** 75 ft. **Productive Acres:** 3000; 300 developed. **Daily Production, July 1, 1938:** 493 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production Through June, 1938:** 143,086 bbls. **Indicated Remaining Reserve:** 19,856,914 bbls. **Deepest Hole:** Sun Oil Co.'s White Estate B-1, Wm. Mays Survey, dr to 9637 ft, dry, April, 1937. **Casing Programs:** Sun Oil Co., 18-in, 91 ft; 20-in, 159 ft; 13⅜-in, 1200 to 1300 ft; 7-in, 8800 ft. **Oil Outlet:** Tank car. **Gravity Oil:** 40-50 degrees. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholder:** Sun Oil Co. **Remarks:** Discovery well ran normal until a fault was cut and then run high. This field is one of the largest gas reserves in the Gulf Coast. Sun Oil Co.'s Acom 3 is considered the discovery well for Willow Slough field. **Heaving Shale:** Is found in this field.

SMITHS POINT*

Edward Branch Survey, 15 mi s and w of Anahuac, where land juts into Galveston Bay. **Means of Discovery:** Seismograph, Humble Oil & Refining Co., 1928. **Principal Leaseholders:** Humble Oil & Refining Co., Gulf Oil Corp., Sun Oil Co., Salt Dome Oil Corp. **Remarks:** Sun Oil Co. leased 2000 acres in the Craft Survey, e of Smith's Point, and worked with reflection seismograph in 1934. Humble Oil & Refining Co. worked with reflection seismograph in the Canada Ranch in 1935.

SOUTH COTTON LAKE

South of Cotton Lake field, centering around S. Barrow and Ben Wenfree surveys. **Means of Discovery:** Torsion balance and reflection seismograph, Salt Dome Oil Corp., Humble Oil & Refining Co., The Texas Co., Stanolind Oil & Gas Co. **Discovery Well:** Salt Dome Oil Corporation's Lawrence 2, April 16, 1936, 214 bbls, 36 gravity oil daily, 6454 ft. Later the well made salt water and was abn. Same operator's Lawrence 1-A, ½ mi w of Lawrence 1, came in Dec. 23, 1936, 30 bbls fluid per hour, 50 percent salt water, 2,000,000 cu ft gas daily, 6538 ft, was pb to 6493 ft, made 5 to 10 bbls distillate daily, Lawrence 1-B, 740 ft s of Lawrence 1-A, came in February 2, 1937, 2½ bbls 42 gravity distillate per hour, 6499 ft. Lawrence 1-C, 1000 ft nw of Lawrence 1-A, made 25 bbls of 32 gravity pipe line oil per hour, March 26, 1937, from 6492 to 6503 ft. **Type Structure:** Deep seated salt dome. **Approximate Elevation:** 30-50 ft. **Producing Formations:** Lower Marginulina-Frio sand at 6454 to 6529 ft. **Productive Acres:** Included with Cotton Lake. **Daily Production, July 1, 1938:** Included with Cotton Lake. **Estimated Ultimate Recovery:** Included with Cotton Lake. **Production Through June, 1938:** Included with Cotton Lake. **Deepest Hole:** Salt Dome and Gem Oil Co.'s Lawrence 2, topped sand 6651 ft, made several tests, dr to 7300 ft, pb and tested 6651 ft, made salt water, abn, May, 1936. **Casing Programs:** Salt Dome Oil Corp., 10-in, 1050 to 1111 ft; 7- or 5-in, 6505 ft. **Oil Outlet:** Sun Pipe Line Co., 4-in. **Gravity Oil:** 32-42 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Salt Dome, Humble, Stanolind, Tide Water Associated Oil Co., Gulf, J. R. Turnbull. **Remarks:** This prospect was the scene of an extensive leasing campaign with acreage and royalty selling at $175 per acre. Over a half million dollars was spent by several major oil companies. Salt Dome Oil Corp. and Gem Oil Co. acquired around 4600 acres on the west shore of Galveston Bay in September, 1935.

*Prospect. †Salt dome, no production. ‡Gas field.

TURTLE BAY

Centering in and around Turtle Bay, S. Burney, Wallis, M. A. Carrol surveys. **Means of Discovery:** Reflection seismograph, torsion balance, Stanolind Oil & Gas Co., 1933, 1934, 1935; torsion balance, Salt Dome Oil Co., 1935. **Discovery Well:** Stanolind Oil & Gas Co.'s A. D. Middleton 1, S. Burney Survey, Dec. 4, 1935, 27 bbls per hour 32 gravity oil, 6626 ft. **Type Structure:** Terrace. **Producing Formations:** Lower Marginulina-Frio of the Oligocene, 6550 to 6625 ft. **Approximate Elevation:** 12-38 ft. **Average Sand Thickness:** 11 ft. **Productive Acres:** 1100; 500 developed. **Daily Production, July 1, 1938:** 1102 bbls. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production Through June, 1938:** 679,730 bbls. **Indicated Remaining Reserve:** 9,320,270 bbls. **Deepest Hole:** Sun Oil Co.'s Chambers 3, sand showing oil 6617-19 ft, salt water sand 7164 ft, 7936 ft abn salt water sand 8025 ft, Jan., 1937. **Casing Programs:** Stanolind, 16-in, 90 ft; 10-in, 1150 ft; 7-in, 6600 ft. Sun, 16-in, 120 ft; 10-in, 1200 ft; 7-in, 6560-90 ft. **Oil Outlet:** Humble Pipe Line Co., 6-in. **Gravity Oil:** 32 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Stanolind, Sun. **Remarks:** One well to 10 acres.

WINNIE*

Around Winnie, centering the Chambers-Jefferson County line, E. Lopez, B. A. Vacco, T. & N. O. Sections 158 and 159, J. Hogatt, J. M. Duran, F. Valmore surveys. **Means of Discovery:** Surface indications, torsion balance, Sun Oil Co., 1934. Glenn H. McCarthy, 1935. Reflection seismograph, Gulf Production Co., 1935. (See Hampshire, Jefferson County.) **Extent of Development:** C. B. Bunte's Simon 1, six mi w of Winnie, T. & N. O. Section 33, quit in salt water sand at 7788 ft, Sept., 1935, in Frio. Had 370 ft of sand which carried salt water from 7370 to 7741 ft, with a few shale breaks. Top of the salt water sand 7560 ft, and solid sand drilled to 7741 ft. Glenn H. McCarthy's Pitt 1, dr salt water sands in Marginulina and Frio formation from 7409 to 7415 ft and 7628 to 7638 ft, quit at 8006 ft, May, 1936. Leverne Decker's Johnson 1, T. & N. O. Section 30, dry in Frio, 7664 ft, Jan., 1937; Broussard Trust 1, H.&T.C. Section 30, topped salt water sand, dry at 7381 ft, April, 1938. **Principal Leaseholders:** The Texas Co., Gulf Oil Corp., Humble Oil & Refining Co., Mills Bennett Production Co., Glenn H. McCarthy Producing Co., Sun Oil Co.

COLORADO COUNTY

ALLEYTON*

R. Alley and J. Crosky surveys. **Means of Discovery:** Surface indications checked by seismograph and torsion balance, 1930, by Humble Oil & Refining Co. and Gulf Production Co. **Type Structure:** Not believed to be a regular salt dome, but considered to have possibilities of being a folded type structure, like Raccoon Bend, 25 mi northeast. It is along Pettus-Raccoon Bend-Conroe trend. **Extent of Development:** Rich Oil Corp. drilled a 1350-ft well one mi e Alleyton, and two tests 2½ mi w Alleyton, one of latter to 2825 ft. In August, 1930, Gulf-Humble-Penn abnd Hugh Wilson 1, 1½ mi se Alleyton, at 4701 ft, having had gas show around 4200 ft. A few miles north of the above tests, McCulloch Oil Co.'s Kansteiner 1, Leander Beason Survey, quit at 4702 ft, August, 1933. E of Rich Oil Corp.'s abnd hole, Mid-Continent Oil Co.'s B. Scherz, J. Cummings Survey, was dry in Cockfield at 4004 ft, 1935.

ALTAIR*

Immediately s of Altair, in C. Winfree, W. J. Jones, G. Looney, Whiting-Osborne surveys. **Means of Discovery:** Surface evidence. Marland Oil Co. seismograph used in 1925; Humble Oil & Refining Co. and Gulf Production Co. torsion balance later. Also Humble core tested after surface work. **Type Structure:** Structure rather than salt dome type prospect. Is along Conroe-Raccoon Bend-Pettus trend. **Extent of Development:** Pilot Oil Co.'s Tait 1, Cook & Dewees Survey, 1½ mi n Altair, abnd 5025 ft, March, 1933. Neuhaus et al's M. C. Barnett 1, Obid K. Winn Survey, quit at 5250 ft, Feb., 1933. Previously Humble Oil & Refining Co. did extensive core drilling, mostly to south of Altair, but including some tests to the north. **Remarks:** Nw of Altair Sun Oil Co. acquired a 5400-acre block se of Glidden in Oct., 1932.

EAGLE LAKE*

Five mi n Eagle Lake, centering around the J. Dugat Survey. **Means of Discovery:** Torsion balance, Union Central Oil Co., 1933-34, Humble Oil & Refining Co., 1933. Reflection seismograph, Humble Oil & Refining Co., Union Central Oil Co., 1933. **Extent of Development:** Edens Oil Co.'s Wells 1, 3 mi w of Eagle Lake, Whiting and Osborne Survey, quit at 5805 ft, March, 1937. Humble Oil & Refining Co.'s Relaw Land Co. 1, J. Dugat sur, abn 5725 ft June, 1937. Northeast of this prospect, O. C. Carvey's Ernest 1, M. Lipman Survey, quit at 6509 ft, Dec., 1937. **Principal Leaseholder:** Humble Oil & Refining Co., 15,000 acres. Leases run to 1940-42.

GARWOOD

I. & G. N., Sections 42, 43, 44, 45, 47, 48; 8 mi w Garwood. **Means of Discovery:** Surface indications, 1928; torsion balance and magnetometer, Coyle-Concord Oil Co. later. **Discovery Well:** Coyle-Concord's Nelson 1, Section 43, July 17, 1932, 80,000,000 cu ft gas well, spray of high gravity oil, from sand at 4021-4052 ft. Had closed in pressure of 1600 pounds. Later was drilled to the Upper Saline Bayou and abnd at 6194 ft, 1934. Logging device showed a gas sand at 4100 ft, oil sand at 4200 ft. The best sand was found from 4375 to 4410 ft. A gas sand was found at

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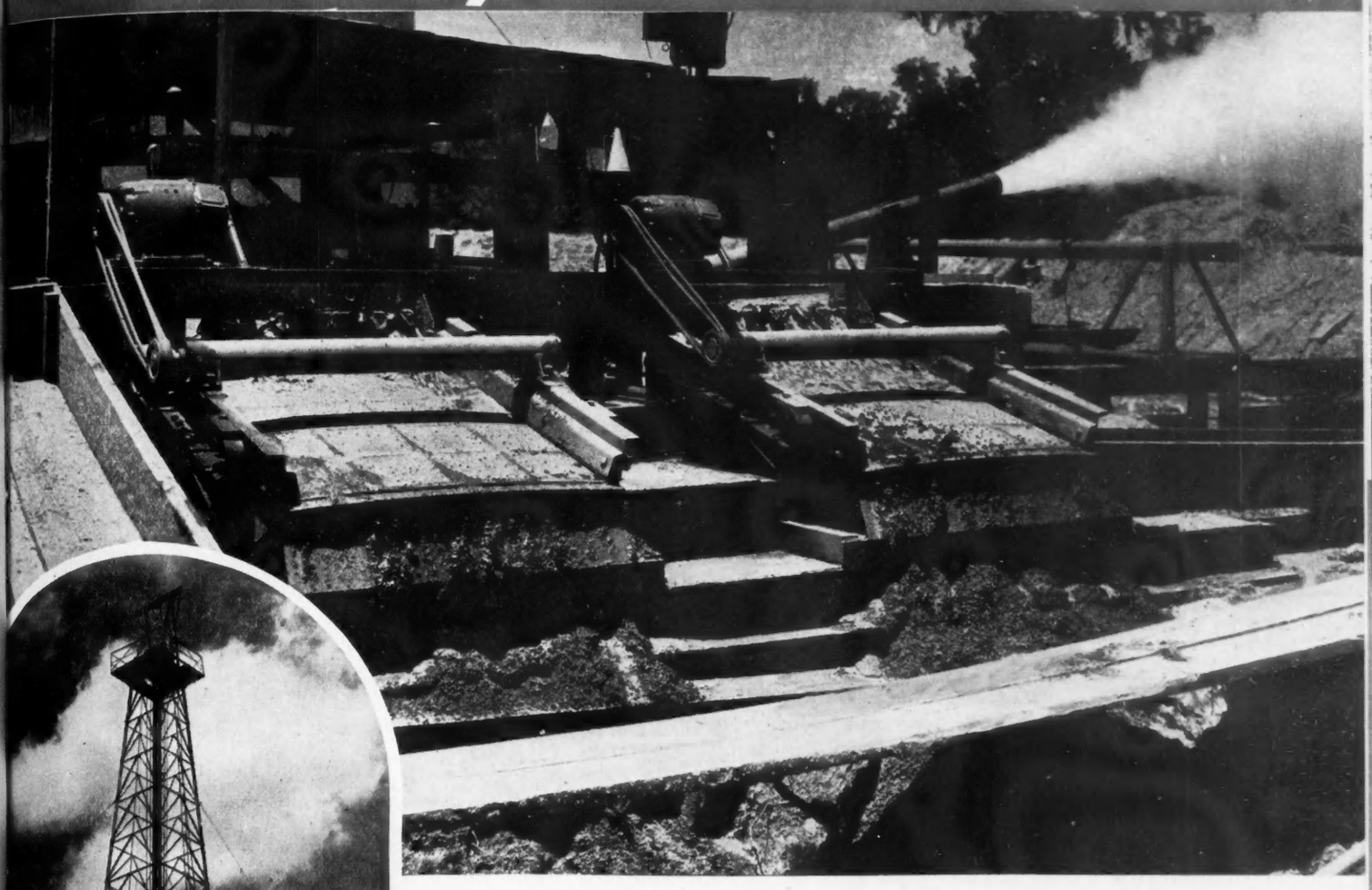

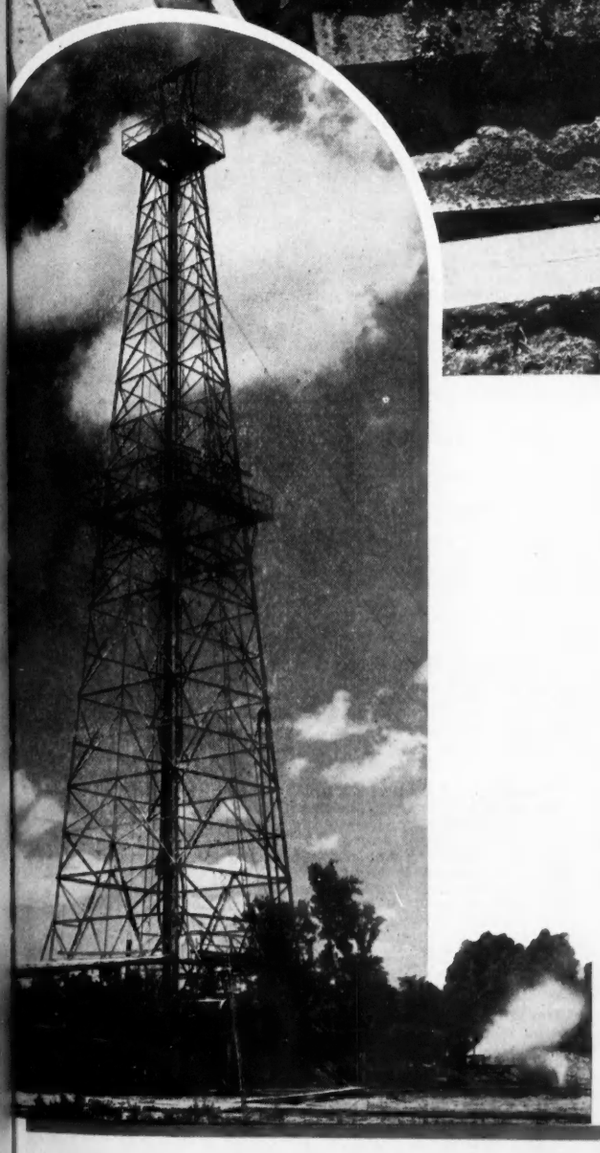

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6167 ft. **Type Structure:** Believed very deep seated salt dome, although no cap rocks or salt has been reached. **Producing Formations:** Frio sand, lower Oligocene, at 4021-4052 ft in discovery well. Cockfield at 6140-6203 ft in Plymouth Oil Co.'s F. L. Ream 1, Section 47, productive well having yielded 1500 bbls 43 gravity oil before ruined by salt water. Coyle-Concord's South 2, Section 41, 75 bbls, 55 gravity distillate daily, 3/32-in choke, 6032-34 ft. **Approximate Elevation:** 165-180 ft. **Average Sand Thickness:** 5 ft. **Productive Acres:** 50; 25 developed. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** 100,000 bbls. **Production Through June, 1938:** 2242 bbls. **Indicated Remaining Reserve:** 97,758 bbls. **Deepest Hole:** Coyle-Concord and Humble's Jno. R. McLane 1, dry at 6766 ft, June, 1933. **Casing Programs:** Sterling Oil & Refining Co., 10¾-in, 780 ft; 5½-in, 6080 ft. Plymouth Oil Co., 16-in, 160 ft; 10-in, 1160 ft; 7-in, 6185 ft. **Oil Outlet:** Trucks. **Gravity Oil:** 55 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Coyle-Concord, Sterling Oil & Refining Co., Humble Oil & Refining Co.

NORTHEAST ALLEYTON*

Between Alleyton and Cat Springs, near town of Bernardo, centering J. W. Martin, John Hennecke, H. White, Thomas Boatwright surveys. **Means of Discovery:** Surface geology; also checked by geophysical instruments about 1929. **Type Structure:** Indicated to be "Conroe trend" type structure. Located along that trend. **Extent of Development:** C. B. Bunte and Shell Petroleum Corp.'s R. Matuska 1, Jno. Hennecke Survey, abnd in shale at 4710 ft in Oct., 1932; no showings. Over half dozen shallow tests have beep drilled by Shell, The Texas Co. and Humble Oil & Refining Co. Transtate Oil Co.'s H. Witte 1, two mi s of Bernardo, dry at 5010 ft, Nov., 1935.

NORTHEAST WEIMAR*

Five mi ne Weimar, centering in J. Petty, J. Duty, F. Pettus and Henry Austin surveys. **Means of Discovery:** Surface geology; geophysics, 1933. **Extent of Development:** Weimar Development Co.'s H. T. Brandt 1 near center Freeman Pettus Survey, quit at 6112 ft, August, 1933, in shale; reported slight gas shows below 4000 ft. Colorado Corp.'s F. J. Janecke 1, Henry Austin Survey, quit at 4560 ft, Dec., 1933; gas show 3500 ft. Colorado Corp.'s G. S. Turner 1, across Colorado River, and in Fayette County, in Jno. Petty Survey, quit at 4520 ft, Nov., 1933. **Principal Leaseholders:** Interests which controlled Weimar Development Co. and Colorado Corp. assembled 30,000-acre lease block.

RAVER*

West of Garwood, centering the B. B. B. & C. Section 1. **Means of Discovery:** Torsion balance, The Texas Co., United Gas Co., 1934; Shell Petroleum Corp., 1933. **Extent of Development:** Danciger Oil & Refining Co.'s Raver 1, drilled to 6337 ft, showed salt water sands in the Upper Saline Bayou. **Principal Leaseholder:** Danciger Oil & Refining Co. has leases running to 1942.

ROCK ISLAND*

One and one quarter mi southeast of Rock Island, centering around the I. & G. N. Section 33. **Means of Discovery:** Torsion balance, reflection seismograph, Gulf Production Co., 1934; topographical high. **Extent of Development:** Quintana Oil Co.'s Olmstead 1, dry at 5400 ft, Sept., 1934. Gulf Production Co.'s A. R. Milentz 1, quit at 5550 ft in Cockfield, May, 1935. **Principal Leaseholders:** Gulf Oil Corp., Quintana Oil Co.

FORT BEND COUNTY

ARCOLA*

Between Thompsons and Arcola, centering around the T. Barnett, David Fitzgerald, H. & T. B. No. 69, and S. Kennedy surveys. **Means of Discovery:** Torsion balance, pendulum and reflection seismograph, Gulf Production Co., 1934. **Extent of Development:** Schwab and Gem Oil Co.'s Arcola Sugar Mill 1, topped Frio 6231 ft, salt water sands 6231 to 6250 ft, abn 6540 ft July, 1937. Research Oil Co.'s Moore 1, S. Kennedy Survey, salt water sands 5631 ft and 6530 ft, dr to 7170 ft, pb 3045 to 3080 ft, abn October, 1937. **Principal Leaseholders:** Gulf Oil Corp., Sun Oil Co., Humble Oil & Refining Co., Dick Schwab and Gem Oil Co. **Remarks:** Gulf Oil Corp. has approximately 9200 acres in the area which is surrounded by Thompsons, Blue Ridge and Manvel oil fields. (See South Fresno prospect).

BEASLEY*

Three mi w Rosenberg, Lester E. Cross Survey 20. **Means of Discovery:** Indicated by torsion balance of Meyer & SoRelle for Gulf Production Co., 1929, showing up as a minimum; also indicated by Humble Oil & Refining Co., torsion balance. This proved an anomaly that did not show up through seismgoraph work. **Extent of Development:** Humble's Miller 1, abnd in shale, 5325 ft, 1929. Vico Oil Co.'s Darst 1, two mi w of Beasley, E. Powell Survey, quit at 6217 ft, Dec., 1934, e of Beasely, Windward Oil Co.'s Simms 1, H. & T. C. No. 1, salt water in Frio at 4441 ft, abnd 6197 ft, Oct., 1937. At one time this well was considered high structurally.

BIG CREEK

Six mi se Rosenberg, Barnabas Wickson and Michael Young surveys. **Means of Discovery:** Gas seeps and sulphur water. **Discovery Well:** Gulf Production Co.'s Wheat 1, May 10, 1922, 150 bbls, 580 ft. **Structure:** Piercement type salt dome, top cap rock 450 ft, top salt 650 ft. **Producing Formation:** Plio-Miocene sands around 800 ft and Lower Oligocene (Frio) sands at 2669 to 4528 ft. **Approximate Elevation:** 50-70 ft. **Average Sand Thickness:** 35 ft. **Productive Acres:** 250. **Daily Production, July 1, 1938:** 582 bbls. **Estimated Ultimate Recovery:** 10,500,000 bbls. **Production Through June, 1938:** 9,463,175 bbls. **Indicated Re-**

*Prospect. †Salt dome, no production. ‡Gas field.

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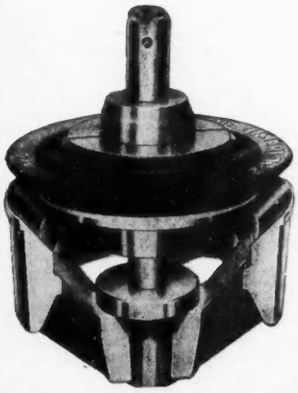

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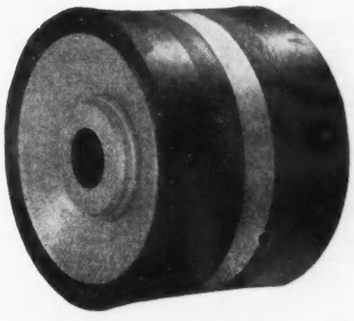

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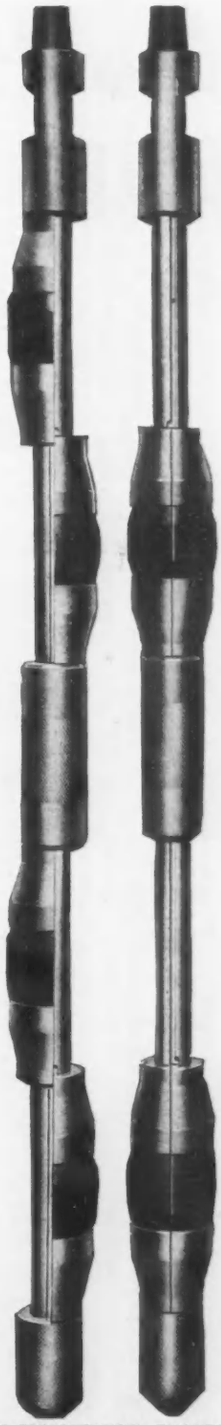

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maining Reserve: 1,036,825 bbls. **Deepest Hole:** C. R. & G. Drilling Co.'s Wheat 1, quit in salt at 5885 ft, April, 1934. **Casing Programs:** Gulf Oil Corp., 10-in, 400 ft; 7-in, 2871 and 3775 ft. Edwards Drilling Co., 10-in, 340 ft, 7-in, 3084 ft. **Oil Outlet:** Gulf Pipe Line Co., 6-in. **Gravity Oil:** 20-42 degrees. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Gulf Oil Corp., Navarro Oil Co., Trans-State Oil Co., Benedum Trees Oil Co., The Texas Co., Glenn H. McCarthy. **Remarks:** Among last salt domes found before advent of geophysics. **Heaving Shale:** Found under Wheatley, Ritchter, Hausler, Davis and Moore tracts on flanks in Vicksburg formation. About 60 ft of heaving shale has been penetrated. Top of heave is logged around 3615-4100 ft. One well is dr to each 10 acres.

BLUE RIDGE

Three mi se Missouri City; H. Shropshire, Thos. Habermacher, E. Drew, J. Poitevent No. 3, and Jno. Lafayette surveys. **Means of Discovery:** Elevation and gas seeps. **Discovery Well:** Gulf Production Co.'s Blakely C-2, April 4, 1919, 1200 bbls, 2705 ft. **Structure:** Salt dome, top cap rock 143 ft, top salt 300 ft. **Producing Formations:** Miocene and Middle Oligocene (Frio) sands at 1956 to 4650 ft. **Average Sand Thickness:** 50 ft. **Productive Acres:** 375. **Daily Production, July 1, 1938:** 791 bbls. **Estimated Ultimate Recovery:** 12,000,000 bbls. **Production Through June, 1938:** 10,668,088 bbls. **Indicated Remaining Reserve:** 1,331,912 bbls. **Deepest Hole:** Sinclair Oil & Gas Co.'s Blakely 1, abnd in salt water at 6189 ft in Vicksburg, July, 1930. **Casing Programs:** Texas Gulf Producing Co., 10-in, 486 ft; 7-in, 3700-4200 ft. **Oil Outlet:** Humble Pipe Line Co., 8-in. **Range of Gravity:** 21-37.9 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Gulf Oil Corp., The Texas Co., Sinclair Prairie Oil Co., Navarro Oil Co., San Jacinto Oil Co., Texas Gulf Producing Co., J. S. Abercrombie, H. R. Cullen, Fort Bend Oil Co., Watts Bros., Cunningham Production Co., Moody Corp., Trans State Oil Co., Mills Bennett Production Co. **Remarks: Heaving Shale:** Found under Luscher, Duff and Blakely tracts in Vicksburg and Hockleyensis formation. Approximately 272 to 854 feet of heaving shale have been penetrated. Top of heave is found at 4500 to 5000 ft.

FRESNO*

Near town of Fresno, C. Heywood, Thomas Gleason and M. Escarlera surveys. **Means of Discovery:** Torsion balance, The Texas Co., 1930. Also others obtained favorable results with torsion balance and magnetometer. **Extent of Development:** The Texas Co.'s J. H. Murdock 1, Chas. Heywood Survey, Brazoria County, abnd Jan., 1931, in sandy shale at 7556 ft. John Deering and Benedum-Trees Oil Co.'s Westenfield 1, M. Escalera Survey, Fort Bend County, abnd Feb., 1933, in shale at 6230 ft. Fresno Petroleum Co.'s Wood 1, Thomas Gleason Survey, Fort Bend County, quit at 5082 ft, late 1933. Turnbull & Irwin's Allison 1, H. & T. B. Section 79, quit at 6050 ft, in Frio, May, 1935. Medford & Burke's Woods 1, abnd 6512 ft, Jan., 1938. Sam E. Wilson's Wood 1, C. Heywood Survey, dr shale 1000 ft, July, 1938. **Remarks:** Although torsion balance and magnetometer results were such as to induce drilling, some companies, using seismograph, failed to verify presence of dome.

FULSHER*

South and west of Katy, centering around A. G. Shaples Survey. **Means of Discovery:** Torsion balance, Gulf Production Co., 1929. The Texas Co., 1934. Reflection seismograph, The Texas Co., 1934, Humble Oil & Refining Co., Amerada Petroleum Corp. **Principal Leaseholders:** Humble Co., The Texas Co., Amerada, Sun, Sinclair Prairie Oil Co.

HARLEM–CLODINE*

Northwest of Sugarland, and n of Richmond, centering M. M. Battle, A. Hodge, J. S. Cartwright, Harlem Prison Farms, I. & G. N. No. 1, Jas. Knight, S Isaacs, White, and W. Andrews surveys. **Means of Discovery:** Indication of a salt dome given by Gulf Production Co. torsion balance in 1929; also indicated later with detailed seismograph work. Torsion balance, Turnbull & Irwin, 1934, Benedum-Trees Oil Co., Gulf Production Co., The Texas Co. and J. I. Sloan, 1934. Reflection seismograph, Independent Exploration Co., 1935; Amerada Petroleum Corp., The Texas Co., 1934. **Extent of Development:** Gulf Production Co. drilled Brazos Valley Irrigation Co. 1, Jno. Frederick Survey, quit at 6065 ft, 1929; No. 2, I. & G. N. Survey, Section A, quit at 4617 ft, 1930. Three mi sw, in Samuel Isaacs Survey, Island Lake Oil Co.'s White 1, quit at 3300 ft. Phillips Petroleum Co.'s A. E. Holmes 1, quit in Diboll, lower Jackson, at 7015 ft, April, 1934, and was regarded as a high well, although no oil or gas showings were reported. Turnbull & Irwin's Herman Hospital 1, J. S. Cartwright Survey, abnd at 6001 ft in Frio, March, 1935. Texas Gulf Producing Co.'s Winston 1, S. Isaacs Survey, s of Phillips' Holmes 1, quit at 7697 ft in salt water sands, Nov., 1935, in Upper Saline Bayou. Salt water sand with odor of oil from 7663 to 7675 ft. **Principal Leaseholders:** Turnbull & Irwin, General Crude Oil Co., Harrison & Abercrombie Oil Co., Sun Oil Co., Magnolia Petroleum Co., Humble Oil & Refining Co., Gulf Oil Corp., Phillips Petroleum Co., Meyer & SoRelle, C. B. Bunte and J. I. Sloan.

IOWA COLONY–SOUTH FRESNO*

West of Manvel field, centering around J W. Maxey H. & T. B. Section 69, I. & G. N. Section 1, on the Fort Bend-Brazoria County line. **Means of Discovery:** Reflection seismograph, The Texas Co., 1934. Stanolind Oil & Gas Co., Gulf Production Co., Humble Oil & Refining Co., Independent Exploration Co., and Hammond Exploration Co. did geophysical work in the area. **Extent of Development:** Six mi s of this prospect, Turnbull & Irwin's Braden 1 was dry at 6857 ft, in salt water sand, Oct., 1934. **Principal Leaseholders:** Gulf Oil Corp., Sun Oil Co., Humble Oil & Refining Co., Felmont Oil Corp., Superior Oil Co. **Remarks:** This prospect was the old Marland Oil Co.'s prospect. Turnbull & Irwin's Braden 1 was drilled on a 5000-acre block worked by reflection seismograph by Hammond Exploration Co. The block centers around the C. Mays Survey. South Fresno and the Arcola prospects closely join each other. Iowa Colony is considered one

*Prospect. †Salt dome, no production. ‡Gas field.

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LONG POINT—(Sulphur Field)

Six mi e Needville, H. & T. C. Sections 56, 57, 66, 67, 101, 102, 110, 111; R. L. Morris, Geo. Waters, and T. F. Pinckney surveys. **Means of Discovery:** Torsion balance, Gulf Production Co., 1924. **Discovery (Oil Well):** Gulf's Wolf 13, 100 bbls, 50 percent oil, 600 ft, Dec. 15, 1928. **Structure:** Salt dome. Top of cap rock 550 ft, salt 930 ft. **Producing Formations:** Sulphur produced from cap rock; oil from sands above cap rock at 600 ft, gas sand 889-97 ft, oil sand 909 ft, 993-996 ft. **Productive Area:** Only a few acres productive of oil. **Extent of Development:** Through 1935, total 72 tests, two oil, 69 dry, and one gas. Drilling mostly shallow, and largely in connection with sulphur exploration and development. Texas Gulf Sulphur Co. began sulphur mining in March, 1930. **Deepest Hole:** Benedum-Trees Oil Co.'s Hensler 1, Chas. D. Sayer Survey, 6500 ft, Dec., 1934. Oil show at 5826 to 5860 ft. **Production Through 1935:** Only sulphur. Small oil production, involving only few barrels, not recorded. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Gulf Oil Corp.; sulphur rights subleased to Texas Gulf Sulphur Co., Earl Trone. **Remarks:** First actual discovery in coast area credited to torsion balance.

NASH

Four mi e Damon, in H. N. Cleveland and Thos. Allsberry surveys. **Means of Discovery:** Elevation, gas seeps, and sulphur water. Dome verified by Rycade Oil Corp. by torsion balance in 1923. **Discovery Well:** Rycade's Nash 5, Jan. 2, 1926, 500 bbls, 4127 ft. **Structure:** Salt dome, top cap rock 625 ft, top salt 950 ft. **Producing Formations:** Miocene sands, 3700 to 4825 ft, and Lower Oligocene, 5644 to 5677 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 120; 120 developed. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** 1,750,000 bbls. **Production Through June, 1938:** 1,667,811 bbls. **Indicated Remaining Reserve:** 82,189 bbls. **Deepest Hole:** Harrison & Abercrombie's Nash 15, reached 6800 ft, shale, Feb., 1932. **Casing Programs:** Rycade Oil Corp., 12½- or 13⅜-in, 999 to 1198 ft; 6⅝- or 9⅝-in, 2999 to 4395 ft. **Oil Outlet:** Humble Pipe Line Co., 6-in. **Range of Gravity:** 19-24 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Harrison & Abercrombie. **Remarks: Heaving Shale:** Is found under Nash & Wisdom tracts in Oligocene formations at 5328 ft. About 760 ft of heaving shale has been penetrated.

NEEDVILLE*

One and one half mi se of Needville, centering around H. & T. C. Sections 25, 26, 36 and Robert Hodge Survey. **Means of Discovery:** Surface elevation; also later a torsion balance prospect (a very large minimum), found first by Meyer & SoRelle in 1928, and checked by other companies. Seismograph found no indications, suggesting no dome unless very deep. Humble Oil & Refining Co. and The Texas Co. worked in the area with torsion balance in 1935. Humble also worked with a magnetometer. **Structure:** One torsion balance test showed structure as fault rather than salt dome. **Extent of Development:** Several shallow tests. South Texas Exploration Co.'s Hartfield 1, H. & T. C. Section 25, reported oil show at 4975 ft, good gas show at 6450 ft, oil show at 6889 ft, depth of abandonment in 1929. Winkleman 1, same section, quit at 4652 ft, 1929. Gem Oil Co.'s Farmer 1, R. Hodge Survey, quit at 6110 ft, August, 1934. Cored sand 5663 to 5830 ft with odor of oil but showed salt water. Humble Oil & Refining Co.'s A. Hackasted 1, abnd 6024 ft, Sept., 1934, showed oil 4543 to 4553 ft, gas 5366 to 5386 ft. Electrical device showed gas sands 4000 to 4035 ft and 4125 to 4150 ft. Sam Harrison's V. Horak 1, salt water sands 4769 to 5346 ft in Frio, quit at 7025 ft in Vicksburg, Dec., 1936, washing well. Marlen Oil Co.'s F. Jurea 1, H. & T. C. No. 26, salt water sands 5154 to 5204 ft, dr to 6523 ft, last 3 ft dr like sand, well blewout, abnd 6523 ft, June, 1937. Humble Oil & Refining Co.'s Schulze 1, abnd 4834 ft, Sept., 1937. **Heaving Shale:** Is found under V. Horak lease. **Principal Leaseholders:** Humble Oil & Refining Co., Shell Petroleum Corp., Pure Oil Co., Gulf Oil Corp.

NORTH ROSENBERG*

Three mi n of Rosenberg, centering Sugarland Industry acreage in J. Foster Survey. **Means of Discovery:** Torsion balance and reflection seismograph, The Texas Company, 1935, 1936. **Extent of Development:** The Texas Co.'s Sugarland Industry 1, dry in Frio, 5160 ft, July, 1936. Well was normal. **Principal Leaseholder:** The Texas Co.; is reported to have surrendered acreage. **Remarks:** See Harlem-Clodine prospect.

ORCHARD

One mi s town Orchard; James Frazier, L. Burknap, Mark Smith, German Emigration Co., David Scott surveys. **Means of Discovery:** Refraction seismograph, Gulf Production Co., 1924. **Discovery Well:** Gulf's Moore 5, Jan. 18, 1926, flowed 2000 bbls 34.5 gravity oil daily at 3702 ft. **Structure:** Shallow salt dome, top cap rock 285 ft, top salt 375 ft. **Producing Formations:** Miocene 1265 to 1315 ft, Heterostegina and Frio sands of Oligocene 2685 to 4150 ft, little production from cap rock; Yegua at 6675 to 7000 ft, 7343 to 7355 ft, and at 7892 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 150. **Daily Production, July 1, 1938:** 395 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 3,379,873 bbls. **Indicated Remaining Reserve:** 1,620,127 bbls. **Deepest Hole:** Gulf Oil Corp.'s Moore 53, dr to 10,085 ft, Dec., 1937, pb and tested. **Casing Programs:** Gulf Oil Corp., 10- or 10¾-in, 503 to 967 ft; 8⅝-in, 1315 ft; 7- or 9⅝-in, 2378-2893 ft; 6⅝- or 7-in, 3400 to 6597 ft. **Oil Outlet:** Gulf Pipe Line Co., 6-in. **Range of Gravity:** 22-51.5 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Gulf Oil Corp., controls dome through leases on Moore land. **Remarks:** First seismograph discovery on Gulf Coast. Seismograph work done for Gulf by "Seismos" G.m.b.H., Hannover, Germany, directed by Dr. L. Mintrop. **Heaving Shale:** Is found under Moore tracts in Oligocene formation around 5590 ft. About 426 feet of the formation has been penetrated.

*Prospect. †Salt dome, no production. ‡Gas field.

PILANT LAKE*

Three mi s Rabb Ridge field, adjacent Pilant Lake, Wm. Barrett and Abner Harris surveys. **Means of Discovery:** Surface evidence; Pure Oil Co. torsion balance in 1929 gave promise. Seismograph did not indicate a dome, however; and drilling has failed to confirm presence of a structural high. **Extent of Development:** Pure Oil Co.'s Brown et al 1, quit at 4510 ft, 1930. Jas. P. O'Hara's T. A. Brown 1 quit at 4572 ft, 1932. Lowrie & Young et al's Brown Estate 1 quit at 5832 ft, 1933. Thompson Drilling Co.'s Brown 1, Geo. Menefee Survey, dry at 6035 ft in Heterostegina formation, October, 1935. Sloan and Zook et al's J. A. Brown 1, dr salt water sands in Frio formation, dry 6510 ft, Dec., 1936; was higher than normal. Jack Frazier has made lcn for Baker et al 1 in Barrett & Harris Survey.

RICHMOND*

Four mi e Richmond, Joseph Kukendall Survey. **Means of Discovery:** Geophysics, Grayburg Oil Co., 1929. Reflection seismograph, Humble Oil & Refining Co., 1937. **Extent of Development:** Grayburg's R. F. Ransom 1, abnd 4335 ft, 1929. Apparently the company regarded the test as condemning the prospect. **Principal Leaseholder:** Humble Oil & Refining Co.

ROSENBERG*

South of Rosenberg, centering around H. Scott, J. Lowery and De May surveys. **Means of Discovery:** Torsion balance and reflection seismograph, Humble Oil & Refining Co., 1934. **Principal Leaseholder:** Humble Oil & Refining Co. **Remarks:** (See Beasley and Needville.)

SIMOMTON*

South of Simomton centering around the Thos. Westhall Survey. **Means of Discovery:** Geophysics. **Extent of Development:** W. S. Boyle's Spencer 1, showed porosity and resistivity on electrical survey from 3540 to 3555 ft; 3565 to 3575 ft; 5622 to 5718 ft, dry at 7013 ft, April, 1938.

SMITHERS LAKE*

Three mi w Thompsons, in L. Smither, Edward Jeffrey, Henry Jones surveys, adjacent to Smithers Lake. **Means of Discovery:** Gas seepages and topography. Work was done about 1928 with both seismograph and torsion balance, casting doubt on importance of prospect. Stanolind Oil & Gas Co. and Atlantic Oil Producing Co. worked the A. P. George acreage with torsion balance and seismograph in 1935. Continental Oil Co. also worked in area. **Extent of Development:** Bunte Oil & Gas Co.'s George 1, J. Jones Survey, quit in Marginulina, salt water sand, 6010 ft, Nov., 1935. Salt water sand from 5455 to 5459 ft. John Byer's Lockwood-Sharp 1, dry 6520 ft, June, 1937.

SUGARLAND

Five mi se Sugarland, Wm. Stafford, Wm. Little and E. Alcorn surveys. **Means of Discovery:** Surface indications and log of old wildcats. Early refraction seismograph shooting, in search of shallow domes, missed Sugarland. But North American Exploration Co. found it by torsion balance for H. C. Cockburn, who later turned leases to Humble Oil & Refining Co., which in meantime confirmed dome by seismograph. **Discovery Well:** First test drilled after geophysical work, Humble's Sugarland Industries 1 established production March 26, 1928, 800 bbls 28 gravity oil, 3536 ft. **Structure:** Salt dome, top cap rock 3500 ft, top salt 4280 ft. Oil sands not pierced by dome. **Producing Formations:** Middle Oligocene sand at 2900-3900 ft; blanket or sheet sand spread unbroken over dome, lending itself well to the pressure maintenance program employed in field. **Average Sand Thickness:** 100 ft. **Productive Acres:** 1175. **Daily Production, July 1, 1938:** 2911 bbls. **Estimated Ultimate Recovery:** 90,000,000 bbls. **Production Through June, 1938:** 26,761,242 bbls. **Indicated Remaining Reserve:** 63,238,758 bbls. **Deepest Hole:** Strake Petroleum Corp.'s Sugarland Industries 2, W. Stafford Survey, flank test, abnd 7042, July, 1938. **Casing Programs:** Humble Oil & Refining Co., 10¾- or 13⅜-in, 1000 to 1200 ft; 6⅝-, 7- or 9⅝-in, 3100 to 3500 ft. **Oil Outlet:** Humble Pipe Line Co., 8-in. **Range of Gravity:** 27-35 degrees. **Rigs Running, July 1, 1938:** One (flank test). **Principal Leaseholder:** Humble. **Remarks:** At time of discovery Sugarland was a relatively deep dome and stimulated search for deeper domes along Gulf Coast. Pressure maintenance system for prolonging flowing life of wells is maintained in field. **Heaving Shale:** Is found below 5950 ft on flank.

SUGARLAND PROSPECT*

South of Sugarland centering the Brown and Belknap surveys. **Means of Discovery:** Geophysics. **Extent of Development:** Chapman Minerals Corp.'s Sugarland Industries 1, abnd 8010 ft, Dec., 1937. See Harlem-Clodine.

THOMPSONS

Two and one-half mi s Thompsons and 13 mi se of Richmond, Jno. Rabb, S. Kennedy, Robert Peebles, and H. Chrisman surveys. **Means of Discovery:** Surface elevation caused first interest, and several years before opening of field torsion balance work revealed anomaly, which was not classed definitely, however, as a salt dome. **Discovery Well:** Gulf Production Co. and Cullen & West's Lockwood & Sharp A-1, completed May 21, 1931, flowing 400 bbls 24.5 gravity oil daily through choke from 3057-3089 ft. **Structure:** Considered deep salt dome, although no cap rock or salt reached. **Producing Formations:** Four Miocene sands at 3050 to 4000 ft; Marginulina zone of Middle Oligocene at 5100-5409 ft. **Approximate Elevation:** 50 ft. **Average Sand Thickness:** 150 ft. **Productive Acres:** 3880. **Daily Production, July 1, 1938:** 12,972 bbls. **Estimated Ultimate Recovery:** 210,000,000 bbls. **Production Through June, 1938:** 27,691,323 bbls. **Indicated Remaining Reserve:** 182,308,677 bbls. **Deepest Hole:** Humble-Gulf's F. I. Booth 2, n flank, H. Crisman Survey, quit at 8539 ft, Oct. 22, 1935. Stuck drill pipe. **Casing Programs:** Texas Co., 10-in, 1150 to 1275 ft. Humble Oil & Refining Co., 10¾-in, 913 ft; 6- or 7-in,

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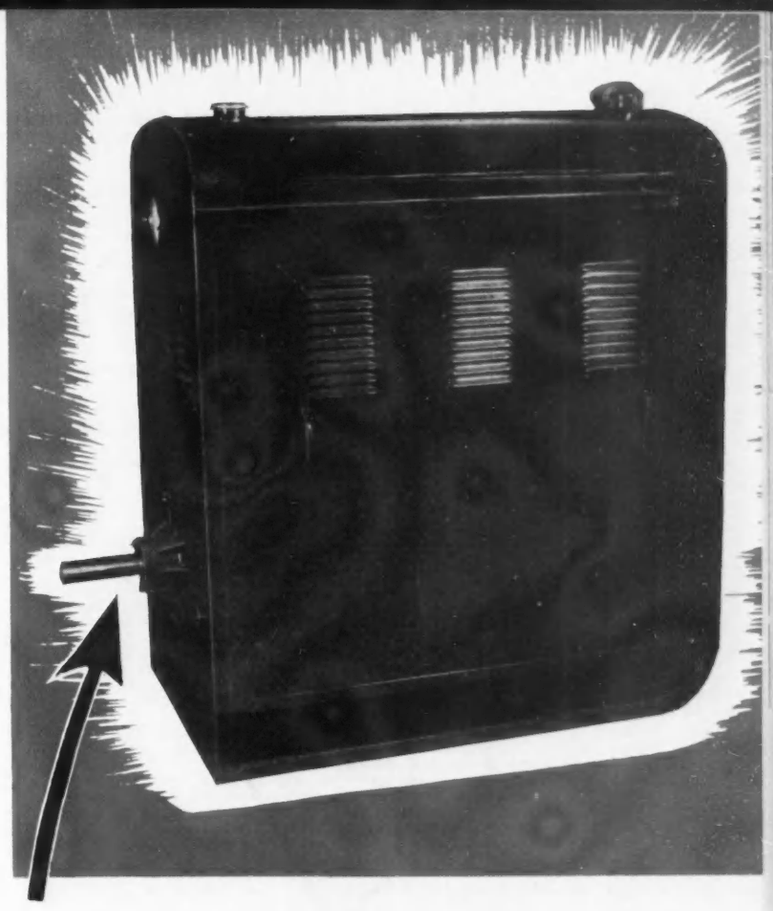

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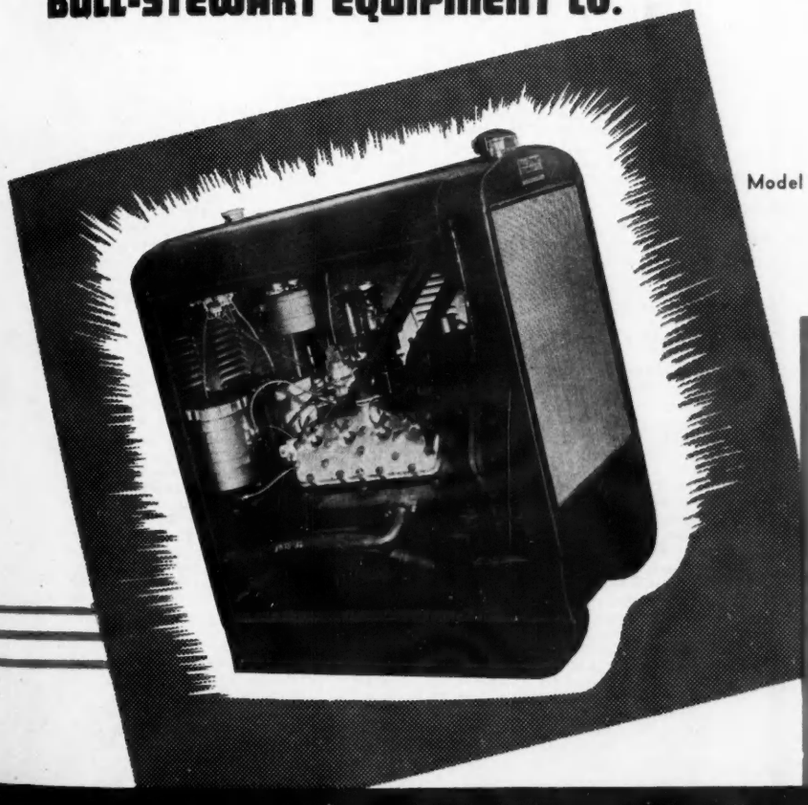

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5272 ft. Gulf Oil Corp., 10-in, 900 to 1100 ft; 7-in, 5000 to 5300 ft. **Oil Outlets:** Humble Pipe Line Co., 8-in. Gulf Pipe Line Co., 6-in. **Range of Gravity:** 25-43 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Gulf Oil Corp., and Humble Oil & Refining Co., operating jointly on 50-50 basis, control nearly whole field; The Texas Company, H. M. Naylor. **Remarks:** Sometimes referred to as Rabbs Ridge. One well is dr to each 20 acres.

GALVESTON COUNTY

ALGOA*

North of Algoa centering I. & G. N. Sections 13 and 26. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1936. **Extent of Development:** Undrilled. **Principal Leaseholder:** Shell. **Remarks:** See Southwest Algoa, Brazoria County.

BOLIVAR PENINSULA*

West of High Island, centers around Wm. Hudson, Dickson, Barrow and B. Franks surveys. **Means of Discovery:** Empire Gas & Fuel Co., torsion balance picture; torsion balance, Sun Oil Co., The Texas Co. Worked by both companies with reflection and refraction seismograph in 1935. **Extent of Development:** Sun's Atkins 1, B. Franks Survey, dry at 7367 ft, June, 1938. Same operator's Cade 1, A. Dickson Survey, sd 8094 ft. July, 1938. **Principal Leaseholders:** Sun Oil Co. and The Texas Co. **Remarks:** 8000 acres under lease. Sometimes referred to as Patton.

DICKINSON

Southeast Dickinson, John Sellers, BBB&C, J. Jones, P. G. Merritt, W. G. Banks, J. S. Sherman, W. K. Wilson and A. E. Edwards surveys. **Means of Discovery:** Seismograph reflection, Pure Oil Co., 1928; Republic Production Co., torsion balance, 1928; Humble Oil & Refining Co. and Stanolind Oil & Gas Co. also worked the area with geophysical instruments. **Discovery Well:** Humble Oil & Refining Co.'s Maco Stewart 1, August 3, 1934, blew out and caught fire from Frio sands topped at 7789 ft; Maco Stewart 1-B, first oil well, 2500 ft w of the discovery well made 5 bbls, 37.6 gravity oil per hour, 8025 ft, Nov. 27, 1934. **Structure:** Deep seated salt dome, however, no dome material yet encountered. **Approximate Elevation:** 10-30 ft. **Producing Formations:** Frio formation of Oligocene, 7800 to 8200 ft; 8300 to 8400 ft; 8400 to 8500 ft; 8600 to 8800 ft; 8800 to 9142 ft. Sands are thin and very lenticular in the field. **Average Sand Thickness:** 20 ft. **Productive Acres:** 4150; 2100 developed. **Daily Production, July 1, 1938:** 5881 bbls. **Estimated Ultimate Recovery:** 40,000,000 bbls. **Production Through June, 1938:** 4,057,532 bbls. **Indicated Remaining Reserve:** 35,942,468 bbls. **Deepest Hole:** Humble's Danielson 1 and Scheffer 1, 9360 ft. Scheffer 1 was abnd while Danielson 1 made a producer at 9140 ft. **Casing Programs:** Humble Oil & Refining Co., 16-in, 215 ft; 10-in, 2000 ft; 7-in, 8000 to 9000 ft. Pure Oil Co., 16-in, 210 ft; 10-in, 1800 ft; 5- or 5½-in, 8000 to 8300 ft. Atlantic Refining Co., 16-in, 210 ft; 10-in, 1900 ft; 7-in, 8100 to 8300 ft. Coast Petroleum Corp., 16-in, 96 ft; 10-in, 2500 ft; 6⅝- or 7-in, 8800 ft. Two strings of casing are required to be set with a minimum of 1200 ft set. **Oil Outlets:** Humble Pipe Line Co., 4-in; Bennett Production 4- and 6-in; Stanolind Pipe Line Co., 6-in; Pan American Pipe Line Co., 4-in. Gas for the Pan American Refinery is furnished from this field. **Gravity Oil:** All sand 36 to 39 gravity while wells set too high make 53 gravity distillate. **Rigs Running, July 1, 1938:** 11. **Principal Leaseholders:** Humble, Stanolind, Pure Oil Co., Atlantic, Coast Petroleum Corp., Ken Ben Oil Co., Pan American, Turnbull & Irwin, Diadem Oil Co. **Remarks:** Dickinson has been classed as three fields by many. Southwest of the discovery well has been called Gillock and northwest has been called Diadem. However, it is one structure with large faults or grabens. Drilling has been one well to 10 acres. Allowable is set by 50 percent of acreage and 50 percent on potential. Humble has a small gasoline plant in the field. The gas/oil ratio for wells is 2000 to 1.

*Prospect. †Salt dome, no production. ‡Gas field.

KIRBY PETROLEUM COMPANY

GALVESTON ISLAND*

Centering the Trimble and Lindsey surveys. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., Gulf Oil Corp. and Stanolind Oil & Gas Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholder:** Gulf.

GREEN'S LAKE

Six mi sw of Hitchcock, centering the W. C. M. Baker Survey. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1935. Torsion balance, Humble Oil & Refining Co., 1928. **Discovery Well:** Sun Oil Co.'s Hughes 1, 220 bbls, 65 percent oil, 35 percent salt water at 3610 to 3620 ft, June 4, 1936. Later killed due to salt water and on potential test June 11, 1936, it flowed 416 bbls 26 gravity oil through ⅜-in choke from 3865 to 3891 ft. Later started making salt water again. Was comp 3627 ft. **Type Structure:** Probable deep seated salt dome. **Approximate Elevation:** 4-20 ft. **Producing Formations:** Plio-Miocene sands at 2712 to 2736 ft; 3610-20 ft; 3865 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 50; 50 developed. **Daily Production, July 1, 1938:** 21 bbls. **Estimated Ultimate Recovery:** 150,000 bbls. **Production Through June, 1938:** 35,008 bbls. **Indicated Remaining Reserve:** 114,992 bbls. **Deepest Hole:** Sun's Hughes 1, dr to 9636 ft, twisted off three joints of dr pipe, pb and comp after finding sands with electrical logging device. (See discovery well.) **Casing Programs:** 13⅜-in, 86 to 1500 ft; 7-in, 2712 to 3890 ft. **Oil Outlet:** Tank cars. **Gravity Oil:** 22 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Sun, Humble Oil & Refining Co. **Remarks:** Farthest down dip well in Texas Gulf Coast to produce oil from Plio-Miocene oil from non-piercement type dome. **Heaving Shale:** Is found under Hughes and Rosenkranz tracts. About 2830 ft of shale has been penetrated in Miocene formation. Top of heave is found around 6810 ft.

HIGH ISLAND

At town of High Island. Martin Dunman and Nicholas Fitzsimmons surveys. **Means of Discovery:** Surface elevation, gas seeps and mineral waters. **Discovery Well:** Sun Oil Co.'s Cade 4, Oct. 28, 1922, 70 bbls, 2250 ft. **Structure:** Salt dome, top cap rock 130 ft, salt 1300 ft. **Producing Formations:** Cap rock at 1500 ft, few wells; Miocene sand at 3625 to 3766, 4400 to 4521, 4614 to 4960 ft, and 5022 to 6275 ft; 6695 to 6710 ft. **Approximate Elevation:** 4-20 ft. **Average Sand Thickness:** 45 ft. **Productive Acres:** 300; 230 developed. **Daily Production, July 1, 1938:** 1485 bbls. **Estimated Ultimate Recovery:** 28,000,000 bbls. **Production Through June, 1938:** 14,669,339 bbls. **Indicated Remaining Reserve:** 13,330,661 bbls. **Deepest Hole:** Stanolind's Cade B-1, n side, M. Dunman Survey, dr to 7179 ft, set 7-in 6720 ft, perforated 6695 to 6710 ft, comp as producer, June, 1937. **Casing Programs:** Stanolind, 10-in, 1150-1400 ft; 7- or 7⅝-in, 5000-6700 ft. **Oil Outlet:** Stanolind Pipe Line Co., 10-in. **Range of Gravity:** 24-40 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** Stanolind Oil & Gas Co. **Remarks: Heaving Shale:** Is found under Mathis, B. & O., Cade and Cooper tracts in Miocene formation; 185 to 480 ft of heaving shale penetrated. Top of heave is found around 6070 ft.

HITCHCOCK

Southeast of Hitchcock, centering around the J. Spillman Survey. **Means of Discovery:** Gas and sulphur in water well. Torsion balance and reflection seismagraph, Shell Petroleum Corp., 1929, 1935, 1936. **Discovery Well:** Maco Stewart's Fee 1, Sept. 5, 1937, 60 bbls 32 gravity oil daily, various size chokes, 5146 ft. Potential reported at 219 bbls daily, ¼-in choke, gas/oil ratio was 376 to 1. See deepest hole and remarks. **Type Structure:** Deep seated dome. **Approximate Elevation:** 10 to 20 ft. **Producing Formations:** Miocene sands 5134 to 5152 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 100; 50 developed. **Daily Production, July 1, 1938:** 285 bbls. **Estimated Ultimate Recovery:** 500,000 bbls. **Production Through June, 1938:** 52,980 bbls. **Indicated Remaining Reserve:** 447,020 bbls. **Deepest Hole:** Shell's Maco Stewart 1, drilled to 10,460 ft, first 10,000-ft well in Texas Gulf Coast; pb and tested 5120 to 5130 ft; Dec. 7, 1936, showed 3,000,000 cu ft gas daily and ½ bbl of 33 gravity oil per hour. Several tests were made around 5140 ft and the well blew out. It was later abnd. **Casing Programs:** H. N. Hunter, 10-in, 1026 ft; 5½-in, 5157 ft; Maco Stewart, 5½-in, 5156 ft. **Oil Outlet:** Maco Stewart's 4-in to Texas City. **Gravity Oil:** 30.6 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** Maco Stewart. **Remarks:** After drilling two dry holes Shell returned block to Maco Stewart. Stewart drilled Fee 1, 300 ft north of Shell's deep hole and completed producer. **Heaving Shale:** Found under Maco Stewart lease. Top of heave is encountered around 7707 ft in discorbis.

KEMAH–LEAGUE CITY*

East of League City centering M. Muldoon League. **Means of Discovery:** Reflection seismograph and torsion balance, Stanolind Oil & Gas Co., 1937. Gulf Oil Corp.'s geophysical work did not

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confirm structure in this area. **Extent of Development:** Undrilled. **Principal Leaseholder:** Stanolind Oil & Gas Co.

TEXAS CITY*

Three mi s of Texas City, centering around the H. B. Littlefield Survey. **Means of Discovery:** Geophysical work by Stanolind Oil & Gas Co., The Texas Co., and Gulf. The latter company worked with reflection seismograph in 1935.

GRIMES COUNTY

CARLOS*

Three mi e and s Carlos, Pat B. O'Connor Survey. **Means of Discovery:** Surface indications; also checked by geophysics, 1929. **Extent of Development:** Dozen or so tests. Oil shows in several wells around 2800 ft. **Deepest Hole:** Petroleum Southwest Corp.'s Greer 1, quit at 5010 ft, 1933.

FERGUSON'S CROSSING†

Five mi w Carlos, centering around J. F. Case and G. W. Seaton surveys, and lying partially in Grimes and Brazos counties. **Means of Discovery:** Surface geology; also checked by torsion balance, Humble Oil & Refining Co. **Structure:** Salt dome. Top salt around 4038 ft. Top cap rock 3840 ft. **Extent of Development:** Humble Oil & Refining Co., G. W. Seaton Survey, Templeman 1 proved dome, quitting in salt at 4170 ft, June, 1933. Henderson 1 quit at 6130 ft, Feb., 1934.

YARBORO*

Three mi sw Yarboro, J. J. Whiteside and J. E. Groce surveys. **Means of Discovery:** Torsion balance, Cranfill-Reynolds Co., 1929. **Extent of Development:** Cranfill-Reynolds' Baylor 1, Whiteside Survey, quit at 4600 ft, 1930; had oil shows between 1800-2200 ft. Same company's Stoneham 1, same survey, dry at 3400 ft. Koch et al's Haferkamp 1, S. Fulton Survey, quit in Cockfield at 3779 ft, 1933.

HARDIN COUNTY

ARIOLA

Two mi w Voth. Eduardo Ariola Survey. **Means of Discovery:** Seismograph, Gulf Production Co., 1928; also shown as dome by seismograph of Humble, Shell and others prior to actual drilling. **Discovery Well:** Republic Prod. Co. and Houston Oil Co.'s Ariola 1, completed Sept. 14, 1932, flowing 320 bbls 41 gravity net oil, 60 percent water, daily through three eighths-inch choke from sand at 3995 to 4157 ft. This was first test drilled on the prospect. **Structure:** Salt dome, top salt 4133 ft. **Producing Formations:** Miocene-Pliocene sands at 3000 to 3579 ft; sands from 3826 to 4320 ft in Heterostegina zone of Middle Oligocene; sands around 4700 ft in Frio. **Average Sand Thickness:** 20 ft. **Productive Acres:** 100. **Daily Production, July 1, 1938:** 460 bbls. **Estimated Ultimate Recovery:** 4,000,000 bbls. **Production Through June, 1938:** 1,780,088 bbls. **Indicated Remaining Reserve:** 2,219,912 bbls. **Deepest Hole:** Gulf Production Co.'s Kirby 1-A, abnd 6743 ft in Vicksburg. **Casing Programs:** Republic Prod. Co., 10, 12½, or 13-in from 600 to 1250 ft; 7 and 9⅝-in, 3259 to 4700 ft. **Oil Outlet:** The Texas Pipe Line Co., 6-in. **Range of Gravity:** 24.1-42. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Republic Production Co., Houston Oil Co. **Heaving Shale:** Is found under Ariola Fee tracts below 5000 ft.

BATSON

Adjacent to town of Batson on northwest. A. M. Lejarza, B. B. B. & C. R.R., Jno. Knight, F. H. Green, Willis Donoho, J. Milhome, Champion Choate Surveys, and State Land Vacancy. **Means of Discovery:** Gas seeps and paraffin dirt. **Discovery Well:** Paraffin Oil Co.'s Fee 1, Oct. 31, 1903; 600 bbls, 790 ft. **Structure:** Salt dome, top cap rock 1080 ft, top salt 2050 ft. **Producing Formations:** Cap rock; sands at 245-920 ft; Oligocene sands ranging down to 3600 ft; Yegua sands from 4867 to 5625 ft. **Approximate Elevation:** 75-90. **Average Sand Thickness:** 30 ft. **Productive Acres:** 600. **Daily Production, July 1, 1938:** 1587 bbls. **Estimated Ultimate Recovery:** 45,000,000 bbls. **Production Through June, 1938:** 38,572,341 bbls. **Indicated Remaining Reserve:** 6,427,659 bbls. **Deepest Hole:** D & L Production Co.'s H. Hooks 1, W. Donohoe Survey, se flank test, dry at 6502 ft, Nov., 1935, in Claiborne formation. **Casing Programs:** Gulf Oil Corp., 7-in, 380 to 740 ft. The Texas Co., 7-in, 4629 ft. John Deering, 10-in, 564 ft; 7-in, from 5100 to 5500 ft. **Oil Outlets:** Sun Pipe Line Co., 6-in; Gulf Pipe Line Co., 6-in. **Range of Gravity:** 20-38.4. **Rigs Running July 1, 1938:** Two. **Principal Leaseholders:** The Texas Co., W. G. Christian et al, Paraffin Oil Co., Gulf Oil Corp., Ada Bell Oil Co., East Batson Oil Co., Hill & Dowell, Capitol Oil Co., Deutser Oil Co., Acorn Oil Co., Shell Petroleum Corp., John Deering, Danciger Oil & Refining Co. **Remarks:** John Deering and Batson Oil Co.'s Hooks 1 extended field over 3000 ft se, Oct., 1934; it made 85 bbls per day from 5090 ft in heaving shale; oil sand was found in Upper Saline Bayou formation from 4896 to 4998 ft. **Heaving Shale:** Is found below 4800 ft.

BRAGG*

South of Bragg, centering around W. K. Griffin Survey. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1935. **Extent of Development:** J. G. Mayo's Haddin 1, dry at 6008 ft, Dec., 1937. **Principal Leaseholder:** Humble Oil & Refining Co. **Remarks:** Sw of Votaw prospect.

*Prospect. †Salt dome, no production. ‡Gas field.

COTTON SURVEY*

Between South Lake and Ariola oil fields, centering W.C. R.R. Sec. 380, and A. J. Cotton Surveys. **Means of Discovery:** Reflection seismograph gave indications of structure. Stanolind Oil & Gas Co. torsion balance, 1935. **Extent of Development:** Resource Production Co.'s Howth 1, dr salt water sand 5501 to 5505 ft and 5913 to 5918 ft, abn 6021 ft July 29, 1936.

GRIGSBY*

Enoch Grigsby and E. Emanuel Surveys, eight mi e of Saratoga dome. **Means of Discovery:** Petty Geophysical Engineering Corp. torsion balance and reflection seismograph, 1929. Stanolind Oil & Gas Co., torsion balance, 1935. David B. MacDaniels worked the area with torsion balance and did surface work in 1935. **Extent of Development:** David B. MacDaniels' None Mills 1 cored salt water sands in Yegua from 8088 to 8098 ft, abn June, 1936. **Principal Leaseholders:** David B. MacDaniels has 4000-acre block. Sun Oil Co., Stanolind Oil & Gas Co. This block was an old block which was worked with reflection which gave indications of a structure.

HESTER*

Centering Chas. Stewart and Edward Lubitt Surveys, next to Tyler County line. **Means of Discovery:** Reflection seismograph, Gulf Oil Corp., 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Gulf.

KOUNTZE*

Two mi n Kountz; centering around J. R. Carry and J. Landis No. 1 Surveys. **Means of Discovery:** Geology, involving surface indications and sub-surface data later. **Extent of Development:** About half dozen shallow tests, from 800 to 2700 ft. Three deep tests. Frazier & Greer's Sternberg Lumber Co. 1, H. T. & B. No. 283 Survey, quit in Cockfield at 6988 ft, June, 1934; found formations higher than normal. Wilcox Oil & Gas Co.'s Sternberg 1, G. Dorsey No. 1 Survey, quit at 6501 ft, Sept., 1934, formations higher than normal. Gas show 3268 to 3280 ft and at 5010 ft Jack Frazier's Sternburg 1, J. J. Pearson Survey, abnd 6897 ft, May, 1935, salt water sand from 6865 to 6895 ft in Cockfield. Jack Frazier's O. Sternenberg 1, J. Houston sur, dr salt water sand 6728 to 6854 ft and 6907 to 6972 ft, dry in Cockfield at 7001 ft, May, 1936. **Principal Leaseholders:** Above named companies; also Humble Oil & Refining Co., United Gas Co., Empire Gas & Fuel Co., Republic Production Co., Houston Oil Co.

SARATOGA

Adjacent to Saratoga, toward the east, M. E. Hopkins Nos. 1 and 2, B.B.B.&C. No. 132, and 72, C. F. S. Jordit, J. F. Cotton, R. Teel, N. Fuller, J. Lewis, B.B.B.&C. Surveys. **Means of Discovery:** Broken surface, mineral water, and gas seeps. **Discovery Well:** Hooks et al's Hooks 1, 1901, 500 bbls, 995 ft. **Structure:** Salt dome, top cap rock 1500 ft, top salt 1900 ft. **Producing Formations:** Pliocene-Miocene and Oligocene sands at 500-2000 ft, and around 2650 ft, 3100 ft, and 3300 ft; cap rock 3320 ft (see remarks). **Approximate Elevation:** 96 ft. **Average Sand Thickness:** 17 ft. **Productive Acres:** 550; 550 developed. **Daily Production, July 1, 1938:** 870 bbls. **Estimated Ultimate Recovery:** 30,000,000 bbls. **Production Through June, 1938:** 28,610,962 bbls. **Indicated Remaining Reserve:** 1,389,038 bbls. **Deepest Hole:** Seven Wells Corp.'s Teel 1, sw flank, dry at 6270 ft, Aug., 1933, in Yegua. **Casing Programs:** Sinclair Prairie Oil Co., 12-in, 1100 ft. Rio Bravo Oil Co., 10-in, 1050 ft. **Oil Outlet:** Sun Pipe Line Co., 6-in; Gulf Pipe Line Co., 6-in. **Range of Gravity:** 16-25. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Paggi Brothers, Weldon Oil Co., Gulf Oil Corp., Sun Oil Co., Rio Bravo Oil Co., E. W. Skinner, Humble Oil & Refining Co., Magnolia Petroleum Co., Hines Brothers, Sinclair Prairie Oil Co. **Remarks:** Hines Brothers' Caswell 1, BBB&C R. R., Section 72, extended field 4000 ft e, Dec., 1934; it made 50 bbls daily on pump from 3321 ft; the Upper Saline Bayou was encountered just above the cap rock.

SILSBEE

Location: Northwest of Silsbee, centering around G. W. Brooks, J. A. Williams, and J. Ellery Surveys. **Discovery Means:** Torsion balance, Republic Production Co. 1934-35. **Discovery Well:** Republic and Houston Oil Co.'s Brooks 1, blew out Aug. 5, 1936, at 6982 ft, cratered and caught fire August 7, making estimated 400 bbls oil daily with a large volume of gas. It was extinguished by Brooks 2, a relief well Oct. 2, 1936. First commercial producer was Brooks 3, 750 ft, sw of cratered well, Dec. 14, 1936, 140 bbls 43 gr oil 22½ hours through ¼-in choke at 6979 ft. **Type of Structure:** Anticline. **Approximate Elevation:** 90-110 ft. **Producing Formations:** Lower Cockfield 6905 to 6982 ft; Upper Cockfield at 6824 to 6910 ft. Top of Cockfield usually around 6735 ft. **Average Sand Thickness:** 25-50 ft. **Productive Acres:** 1000; 500 developed. **Daily Production, July 1, 1938:** 1414 bbls. **Estimated Ultimate Recovery:** 9,000,000 bbls. **Production Through June, 1938:** 717,673 bbls. **Indicated Remaining Reserve:** 8,282,327 bbls. **Deepest hole:** Republic's Brooks 2, relief well for discovery well, drilled 7136 ft, discovered new sand comp Dec. 21, 1936 in Upper Cockfield sand. **Casing Programs:** Republic, 16-in, 40 ft; 10-in, 1400 to 1500 ft; 7-in, 6850 to 6950 ft. **Oil Outlets:** Atlantic Pipe Line Co, 4-in. **Gravity Oil:** 43-45 degrees. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Republic Production Co. and Houston Oil Co. Fee lands. Humble Oil & Refining Co. **Remarks:** One well to 20 acres.

SOUR LAKE

Adjoins Sour Lake on the north, being in Stephen Jackson, H. Williams Survey and H.&T.B. Section, A-282. **Means of Discovery:** Broken surface, gas seeps, and mineral waters. **Discovery Well:** Sour Lake Oil Co.'s Fee 2, July 18, 1902, 10,000 bbls, 375 ft. **Structure:** Salt dome, top cap rock 660 ft, top salt 750 ft; field produced originally from cap rock in large quantities; revived in 1913 by discovery of deep flank sand. **Producing Formations:** Pliocene-Miocene sands and cap rock at 500-1200 ft, and middle Oligocene and lower Oligocene sands at 1793 to 4400 ft; Upper Saline Bayou, 4505 to 4509 ft; Cockfield at 6804 ft showed

34 gr oil. **Approximate Elevation:** 23-43 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 900. **Daily Production, July 1, 1938:** 1172 bbls. **Estimated Ultimate Recovery:** 90,000,000 bbls. **Production Through June, 1938:** 78,771,840 bbls. **Indicated Remaining Reserve:** 11,228,160 bbls. **Deepest Hole:** Sun Oil Co.'s R. S. Sterling 1, ne flank, dry at 7914 ft, March, 1935. **Casing Programs:** Stanolind Oil & Gas Co., 10-in, 110 ft; 6⅝-in, 3956 ft; Sterling Oil & Refining Co., 16-in, 197 ft; 10¾-in, 1739 ft. Humphrey Oil Co., 12½-in, 1665 ft; 6⅝-in, 3875 ft. **Oil Outlet:** Gulf Pipe Line Co., 6-, 8-, and 10-in; The Texas Pipe Line Co., 12-in; Stanolind-Sun Pipe Line Co., 10-in. **Range of Gravity:** 16-31. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Rio Bravo Oil Co., Lake View Oil Co., Gulf Oil Corp., The Texas Co., Orange Petroleum Co., Minor Oil Co., Gilbert Oil Co., Lake Graham Oil Co., Theis Oil Co., Stanolind Oil & Gas Co., Houston Production Co., M. L. Yount, Tr., Prudential Oil Co., Humble Oil & Refining Co., Sun Oil Co., Alpha Petroleum Co., Kirby and Woodley Pet. Co. **Remarks:** Five tests on the ne flank showed commercial oil and gas in the Cockfield but due to heaving shale and fine sands were forced to abn; Yount-Lee Oil Co.'s Fee Lynn 1, S. Jackson Survey, drilled 3811 ft of salt from 3650 to 7461 ft. **Heaving Shale:** Is found under the Weiss, Kirby and Sterling leases in Vicksburg and Cockfield formations on flank around 5850 to 7071 ft.

VOTAW*

Three mi ne Votaw, Benj. H. Hawkins and Mary K. Sherman Surveys. **Means of Discovery:** Geophysical work was done in 1931 by several companies, including Gulf Production Co. seismograph. **Extent of Development:** Funderberg & Smith's Kirby 1, Hawkins Survey, dry, 2840 ft. S. Robichaux et al's McShane 1, same survey, dry, 3919 ft, 1932. W. R. Alexander et al's Southwestern Lumber Co. 1, Sherman Survey, dry, 3691 ft, 1932. **Deepest Hole:** S Robichaux's McShane 1, Hawkins Survey, 3919 ft.

HARRIS COUNTY

ADDICKS*

Near Addicks, centering in central portion of Wm. Hardin Survey. **Means of Discovery:** Surface evidence; torsion balance of Cockburn Oil Corp. about 1932, indicated a "high." Reflection seismograph, Independent Exploration Co., Standard Oil Co. of Kansas, 1933. Torsion balance, The Texas Co., 1933, Stanolind Oil & Gas Co., 1934. **Extent of Development:** Several shallow tests, including some by The Texas Co. Cockburn Oil Corp.'s Mancuso 1, William Hardin Survey, near Buffalo Bayou, dry at 6290 ft. Cockburn Oil Corp. and Frazier's Herman Hospital 1 quit at 7597 ft, March, 1935. Took eight cores in Cockfield, but found no sand. Well was abnd in Eponidez Yeguaensis; structurally lower than Mancuso 1.

ALDINE*

One and one half-mi nw Aldine, centering around Simon Centreras Survey. **Means of Discovery:** Torsion balance, Petty Geophysical Engineering Corp., 1928. Gulf Production Co., Humble Oil & Refining Co., The Texas Co., and others also checked prospect about same time and took leases. On recheck by various companies, however, there was no verification and Vacuum Oil Co.'s geophysics failed to find encouragement. In 1932 prospect was worked by Petty. In 1936, R. M. Gillespie worked the area with his own torsion balance instrument. **Extent of Development:** Texas Gulf Producing Co.'s Gillespie 1, ele 102 ft, top Cockfield 6347 ft, cored salt water, gas and distillate sands 6924 to 7307 ft, drill-stem tests showed salt water, gas and distillate. Top Cook Mountain 7825 ft dr to 8084 ft and set 7-in csg 7180 ft. Perforated 7090 to 7100 ft, error in measurements, pb reperforated 7097 to 7100 ft, came in April 7, 1937, flowed fluid four hours tubing pressure 300 pounds, casing, 700. Went dead and was washed again April 8, 1937, flowed trace of 38 gr oil. Well went dead and after reperforating at 7078 to 7083 ft the hole was abn in July, 1937. Same operator's Moore 1, cored salt water sands 6888 to 6893 ft and 7219 to 7254 ft, abn 7445 ft Sept., 1939. Rath 1, M. Sevey Survey, showed gas and distillate 7346 ft, encountered salt water sand 7618 ft, abn Dec., 1937, at 7698 ft. Jack Frazier's Gillespie 1, S. Contreras sur, salt water sands 7100-7150 ft, abn 7880 ft, May, 1938. **Principal Leaseholder:** Texas Gulf Producing is reported to have sold over $100,000 worth of leases in this area to major and independent oil companies before spudding in Gillespie 1.

ALMEDA*

Adjacent to Almeda on the south, in R. T. Blackburn, J. Hamilton, H. Sanders, and J. W. Moody Surveys. **Means of Discovery:** Vacuum Oil Co. torsion balance, 1928. Area also gave promise previously through surface indications. Seismograph as well as torsion balance has given indication of a very deep dome. Reflection seismograph, Humble Oil & Refining Co., 1935. **Extent of Development:** South Texas Petroleum Co.'s Hicks-Higbee 1, J. Hamilton Survey, abnd 4412 ft in 1929. Also about two mi to west two previous tests drilled in H. Sanders Survey, including a 3500-ft test of Cullen et al. **Principal Leaseholder:** Humble Oil & Refining Co.

BAMMEL

West of Westfield, centering around the J. Farwell and J. Ehrhardt Surveys. **Means of Discovery:** Nearly all the major and independent oil companies have worked in this area with geophysical instruments. It is an old Humble Oil & Refining Co., torsion balance prospect which was located in 1928. **Discovery Well:** Hamil & Smith's Zappe 1, March 31, 1937, 3 bbls 53 gr distillate per hour, ¼-in ch, after perforating csg at 6205 to 6211 ft. Later gauged 16 bbls 58 gravity distillate, 1,000,000 cu ft gas daily through ¼- and 9/64-in ch. **Type Structure:** Possible deep seated faulted salt dome. **Approximate Elevation:** 115-130 ft. **Producing Formation:** Cockfield, 6170 to 6175 ft; 6205 to 6211 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 300; 40 developed. **Daily Production, July 1, 1938:** 14 bbls. **Estimated Ultimate Recovery:** 500,000 bbls. **Production Through June, 1938:** 8729 bbls. **Indicated Remaining Reserve:** 491,271 bbls. **Deepest Hole:** Superior Oil Co.'s Butler 1, dr to Wilcox 10,574 ft, pb and perforated 6170-75 ft, comp for gas well, Sept., 1937. **Casing Programs:** Hamil & Smith, 10-in, 1200 ft; 5½-in, 6623 ft. **Oil Outlets:** Wells shut in. **Gravity Oil:** 58. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Superior Oil Co., Geo. Lawrence, Hamil & Smith. **Remarks:** Geo. Lawrence dr discovery to 6526 ft where drill stem stuck. Hamil & Smith took over and dr to 6623 ft, set 5½-in csg at 6623 ft, perforated 6412 to 6428 ft, showed salt water, then plugged back to the producing sand.

BATTLE GROUND*

Centering around San Jacinto Battle Ground, A. McCormick Survey. **Means of Discovery:** Surface geology; geophysics. **Extent of Development:** T. S. & F. Oil Co.'s Hines 1, dry at 3915 ft in Miocene, 1935. It made a small amount of gas and brackish water. Several shallow holes drilled by Buckholtz & Miller. Cockburn Oil Corp.'s Houston Ship Channel 1, quit at 5785 ft, November, 1935, in Frio, had salt water sand 5560 to 5568 ft. W. S. Howell's Root 1, abn 2800 ft, February, 1938. **Principal Leaseholders:** T. S. & S. Oil Co., Stanolind Oil & Gas Co., Cockburn Oil Corp., Shell Petroleum Corp., Tide Water Oil Co., S. Dunman. **Remarks:** Shell Petroleum Corp.'s refinery and Houston Oil Co.'s fee land located in the area.

BELLAIRE*

Southwest of Bellaire and four mi nw Pierce Junction dome, centering around J. M. Swisher, W. Twist, C. McKenzie Surveys. **Means of Discovery:** Reflection seismograph, Texas Gulf Producing Co., 1934. **Extent of Development:** Loring Oil & Gas Co.'s Westmoreland Development Co. 1, J. M. Swisher Survey, quit at 7664 ft with a stuck drill stem, August, 1934. Texas Gulf Producing Co.'s Westmoreland 1, nw of Loring Oil & Gas Co.'s Westmoreland 1, abnd 9111 ft, February, 1936. **Principal Leaseholders:** Texas Gulf Producing Co. and C. B. Bunte.

BURNETT BAY*

Centering in and around Burnett Bay in Nathaniel Lynch Survey. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1934. Within a radius of two mi of Burnett Bay, The Texas Company worked with reflection seismograph, July, 1934; Sun Oil Co., May, 1934, and Standard Oil Co. of Kansas, June, 1933. **Extent of Development:** Cranfill & Reynolds Brown 1, dry 6124 ft. Cockburn Oil Corp.'s T. W. Thompson 1 dr salt water sand in Frio, quit at 7008 ft, March, 1936. **Principal Leaseholders:** Humble Oil & Refining Co. (bed of bay), Shell Petroleum Corp., Stanolind Oil & Gas Co.

CLEAR LAKE

Northeast of Friendswood, centering the J. Lindsey Survey. **Means of Discovery:** G. W. Somers Geophysical Corp. reflection seismograph for West Production Co. 1934-1935. Stanolind Oil & Gas Co. worked in the area. **Discovery Well:** West Production Co.'s Sowden 1, came in April 7, 1938 making gas and distillate from perforations at 5970 to 5990 ft. Was killed and perforated from 5790 to 5805 ft, made an estimated 2,000,000 cubic feet of gas daily through ¼-in choke. **Type Structure:** Faulted dome. **Approximate Elevation:** 30 ft. **Producing Formation:** Frio 5790 to 5805 ft. **Average Sand Thickness:** 43 ft. Over 100 ft of gas sand. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** None. **Indicated Remaining Reserve:** 1,000,000 bbls. **Deepest Hole:** West Prod Co.'s Fee A-1, 2300 e of discovery well, dry 7210 ft, May, 1938. **Casing Programs:** West Production Co. 10¾-in, 1093 ft; 7⅝-in, 6005 ft. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Stanolind Oil & Gas Co. and West Production Co. **Remarks:** The discovery well was high for the area and caused considerable excitement when reports were circulated that it had 360 feet of oil sand. Stanolind Oil & Gas Company farmed out 20-acres to West Production Co. to drill the first well.

CLINTON

Ne of Houston, centering around Reels & Trobough Survey. **Means of Discovery:** Torsion balance and reflection seismograph, Stanolind Oil & Gas Co., 1933-34. Fohs Oil Co. 1934, Humble Oil & Refining Co. and Independent Exploration Co. 1935, and The Texas Co., 1927-28. **Discovery Well:** Stanolind's Angello Candelari 1, blew out Oct. 25, 1936, 8101 ft, making gas and distillate. Was killed and made 5 bbls of 48 gr distillate per hour along with 10,000,000 cu ft gas daily through two ¼-in chokes. **Type Structure:** Deep seated dome. **Approximate Elevation:** 33 to 53 ft. **Producing Formations:** Miocene 3220-25 ft; 3596-3600 ft; 3795-3829 ft; Cockfield 8080-8102 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 225; 100 developed. **Daily Production, July 1, 1938:** 620 bbls. **Estimated Ultimate Recovery:** 2,000,000 bbls. **Production Through June, 1938:** 45,647 bbls. **Indicated Remaining Reserve:** 1,954,353 bbls. **Deepest Hole:** Stanolind's Oates encountered several sands to 8783 ft, pb and abn 5760 ft, June, 1937. **Casing Programs:** Stanolind, 13-in, 85 ft; 10-in, 1200 ft.; 5¾ or 7-in, 3200 to 3700 ft. **Oil Outlets:** Storage. **Gravity Oil:** 22 and 48. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Stanolind, Sun Oil Co., Shell Petroleum Corp., Humble Oil & Refining Co., The Texas Co., McElreath & Suggett. **Remarks:** Was called Reels & Trobough in 1936 Gulf Coast issue. Also referred to as Green's Bayou.

COCKBURN*

North of Deep Water on Houston Ship Channel, centering R. R. Vince and Harris and Carpenter Surveys. **Means of Discovery:** Sub-surface indications. Geophysical work by Continental Oil Co., Shell Petroleum Corp., and The Texas Co. **Extent of Development:** Turnbull & Irwin's Brooks Estate 1 quit at 6015 ft, salt water sand in Frio February, 1934. Cockburn Oil Corp.'s Brooks Estate 2, 5745 ft, salt water sand in Frio, August, 1935. Sand was cored from 5680 to 5690 ft in Marginulina. Harlen Oil Co.'s Ship Channel 1, show gas 3135-50 ft, salt water sands 5200 ft down to 6028 ft, abnd March, 1936, at 6028 ft. Cockburn's White 1,

*Prospect. †Salt dome, no production. ‡Gas field.

Harris and Carpenter Survey, salt water sand 5325-30 ft abn 6017 ft, December, 1937. Jack Frazier's Houston Deepwater Water & Land Co. 1. T. Earle sur, salt water sand 5453-75 ft, 6600-6900 ft, abn 6900 ft, June, 1938. No. 2 cored salt water sand 7190-7742 ft, abn 7743 ft in salt water sand July, 1938. **Principal Leaseholders:** Cockburn Oil Corp., Temple Hargrove, Turnbull & Irwin, Continental Oil Co. **Remarks:** See Deer Park, Burnett Bay and Battleground.

CROSBY*

Five mi n of Crosby, D. Culp, A. Reeves, F. Rankin, J. Sellers, H. Jackson, R. White and Wm. White Surveys. **Means of Discovery:** Torsion balance, reflection seismograph, Humble Oil & Refining Co., 1934. Stanolind Oil & Gas Co., and Shell Petroleum Corp. have worked in the vicinity with geophysical instruments. **Extent of Development:** J. H. Hodge's Wilda Scott 1, dry at 6275 ft, 1934. Humble's Rohlf 1, J. Sellers Survey, dry at 8116 ft, Feb., 1938. Merit Oil Co.'s G. Smith 1, F. Rankin sur, ran 200 ft higher than Humble's dry hole, topped salt water sand 7749 ft, abn 7901 ft, June, 1938. **Principal Leaseholders:** Humble Oil & Refining Co. (11,000 acres), Shell Petroleum Corp., Stanolind Oil & Gas Co. **Remarks:** Humble Oil & Refining Co. controls a block which joins the Stanolind block on the n. Over 11,000 acres under lease in this area. See Hale.

CYPRESS*

Northwest of Cypress centering J. W. Moody, J. W. Baker Surveys. **Means of Discovery:** Reflection seismograph, Gulf Oil Corp., 1936. **Extent of Development:** Undrilled; several shallow holes. **Principal Leaseholder:** Gulf.

DEER PARK*

Between Deer Park and Strange, N. Clapper, G. N. Patrick, Harris and Carpenter, Enoch Brinson, Wm. Jones Surveys. **Means of Discovery:** Torsion balance, 1928. Humble Oil & Refining Co., Gulf Production Co. Reflection seismograph, 1935, Amerada Petroleum Corp. **Extent of Development:** Several early shallow tests. Since geophysical work, five deep tests, all below 6000 ft, drilled by W. C. Turnbow et al, Strange Petroleum Corp., McCarthy et al, and Turnbull & Irwin. Latter's Dunn 1, Brinson Survey, showed some gas on drill stem at 2600 ft. Strange's J. W. Good 1 same survey, reported gas show at 6000 ft. Amerada's Esperson 1, topped salt water sand 5546 ft, dr to 6505 ft in Frio, abn April, 1936. Circle W. Oil Co.'s Houston Realty 1, cored salt water sand with shale breaks from 5100 to 6027 ft, in Marginulina and Frio, abn July, 1936. West Prod. Co.'s Underwood 1, N. Clapper sur, abn 8500 ft, Sept., 1937. **Deepest Hole:** McCarthy et al's Harrison 1, Wm. Jones Survey, dry at 6715 ft, September, 1933. **Remarks:** See Battle Ground and Burnett Bay prospects.

EAST KATY*

Five mi e of Katy, centering around the H. & T. C. and W. C. R. R. Surveys. **Means of Discovery:** Reflection seismograph and torsion balance, Humble Oil & Refining Co., 1933-34. The general area has been worked with reflection seismograph by Amerada Petroleum Co., Independent Exploration Co. Torsion balance work was done by The Texas Co., Stanolind Oil & Gas Co. **Principal Leaseholder:** Humble Oil & Refining Co. **Remarks:** The block consists of 40,000 acres which was taken on a geophysical option which was exercised in 1934; leases taken for 10 years.

EUREKA

Northwest of Houston, centering H. and J. Reinerman Survey. **Means of Discovery:** Torsion balance, Humble Oil & Refining Co.; Dr. Sundt, reflection seismograph, Tide Water Oil Co. and others. Reflection seismograph did not confirm torsion balance indication of dome. Subsurface work by Jack Frazier. **Discovery Well:** C. B. Bunte's Lackner 1, Nov. 22, 1934, 45 bbls 51 gr distillate, 3/32-in choke at 7662 ft after pb from 7681 ft. First commercial oil well was Jack Frazier's Vollmer & Nieman 1, 616 bbls 34.5 gravity oil daily, ¼-inch choke, March 23, 1938, 7730 ft. **Structure:** Considered deep seated salt dome; no dome material has been encountered; not much structure, slight "nosing." **Producing Formation:** Yegua series, 231 ft, below top of Cockfield in Upper Saline Bayou, from sands at 7662 to 7740 ft. **Approximate Elevation:** 70-90 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 350; 80 developed. **Daily Production, July 1, 1938:** 740 bbls. **Estimated Ultimate Recovery:** 9,500,000 bbls. **Production Through June, 1938:** 85,174 bbls. **Indicated Remaining Reserve:** 9,414,826 bbls. **Deepest Hole:** Means & McGehee's Laura Lackner 1, dry at 7852 ft, in Upper Saline Bayou, February, 1935. **Casing Programs:** Bunte Oil & Gas Co., 13-in, 1040 ft; 7-in, 7646 ft. Houston Oil Co., 13⅜-in, 1446 ft; 10-in, 4953 ft; 7-in, 7662 ft. Jack Frazier, 13⅜-in, 44 ft; 10¾-in, 2524 ft; 5½-in, 7730 ft. **Oil Outlet:** Jack Frazier's 4-in to loading rack. **Range of Gravity:** 51. **Rigs Running July 1, 1938:** Four. **Principal Leaseholders:** Alamo Drilling Co., Humble Oil & Refining Co., Tide Water Oil Co., Eureka Production Co., Darby Petroleum Co., Stanolind Oil & Gas Co., Magnolia Petroleum Co., Gulf Oil Corp., Houston Oil Co. **Remarks:** One well to 20 acres. Allowable 50 percent on acreage and 50 percent on potential. The gas/oil ratio is 2000 to 1.

FAIRBANKS

Three mi ne of Fairbanks, centering the A. Larson, J. Clarkson, J. Waugh, W. K. Hamblin, G. Ayers Surveys. **Means of Discovery:** Torsion balance, Humble Oil & Refining Co., 1928. Reflection seismograph Amerada Petroleum Corp. and Stanolind Oil & Gas Co., 1933 and 1937. **Discovery Well:** Amerada and Stanolind's Mills 1, Jan. 12, 1938, 675 bbls, 38.8 gravity oil daily, ¼-in ch, 6863 ft. **Type Structure:** Anticline. **Approximate Elevation:** 110-130 ft. **Producing Formation:** Yegua, 6823 to 6900 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 800; 300 developed. **Daily Production, July 1, 1938:** 2060 bbls. **Estimated Ultimate Recovery:** 23,000,000 bbls. **Production Through June, 1938:** 111,806 bbls. **Indicated Remaining Reserve:** 22,881,194 bbls. **Deepest Hole:** Union Prod. Co. **Casing Programs:** Amerada-Stanolind, 10-in, 1388 ft; 7-in, 6859 ft. **Oil Outlets:** Humble Pipe Line Co., 4-in. **Gravity Oil:** 38.8. **Rigs Running, July 1, 1938:** Ten. **Principal Leaseholders:** Amerada-Stanolind, 50-50 basis; Ralph Johnson, Smith & Owenby, H. E. Williams, Skelly Oil Co., Sinclair Prairie Oil Co. **Remarks:** See Satsuma.

FRIENDSWOOD

Northeast of Hastings field, south of Genoa, centering around the common corners of Brazoria, Galveston, and Harris Counties in the Perry & Austin, Thomas Choate Surveys. **Means of Discovery:** Geology, reflection seismograph, torsion balance and gravitometer by Humble Oil & Refining Company and West Production Co., 1933. G. W. Somers was first to shoot the entire structure. **Discovery Well:** Humble's Settegast 1, July 10, 1937, 650 bbls 30.1 gr oil daily through ¼-in ch from sands at 5811-6009 ft. **Type Structure:** Dome with considerable faulting. **Approximate Elevation:** 30-50 ft. **Producing Formations:** Frio sands 5706 to 6009 ft. **Average Sand Thickness:** 150 ft. **Productive Acres:** 5000; 500 developed. **Daily Production, July 1, 1938:** 2003 bbls. **Estimated Ultimate Recovery:** 250,000,000 bbls. **Production Through June, 1938:** 419,647 bbls. **Indicated Remaining Reserve:** 249,580,353 bbls. **Deepest Hole:** Humble's Houston Development Co. nw flank test, no shows in producing horizon, dr to 8452 ft, abn in July, 1938. **Casing Programs:** Humble, 9- or 10-in, 1050 ft; 5½- or 7-in, 5700 to 6000 ft. **Oil Outlets:** Humble Pipe Line Co., 8-in. **Gravity Oil:** 30.1. **Rigs Running, July 1, 1938:** Four. **Principal Leaseholders:** Humble, V. H. Borsodi. **Remarks:** 20-acre spacing; gas/oil ratio 2000 to 1.

GENOA†

Near Genoa, Aug. Whitlock, G. Dedrick, C. P. Barnett, J. Pruitt, D. Putnam Surveys. **Means of Discovery:** Torsion balance, 1928; North American Exploration Co. for H. C. Cockburn. **Discovery Well:** Jack Schultz et al's West 1, Geo. Dedrick Survey, 25 million ft gas, 3397-3404 ft, Oct. 1, 1933. **Producing Formation:** Gas from sand at 3397-3404 ft. **Productive Area:** Only a gas well has yielded production. **Deepest Hole:** West Production Co.'s Woodburn 1, dry at 7777 ft, June, 1935. **Rigs Running:** None. **Principal Leaseholders:** H. C. Cockburn, West Production Co., Humble Oil & Refining Co. **Remarks:** Humble Oil & Refining Co. took over Cockburn block, drilled two tests and turned back, 1930. Jack Schultz et al drilled on same block in 1932-1933. West Production Co. has three-quarter interest in 1382 acres and assigned Humble Oil & Refining Co. half interest. H. C. Cockburn has 370 acres. Gulfboard Oil Co. and Circle Oil Co. dr dry holes in this area. Both companies logged salt water in Frio formation below 6500 ft. **Remarks:** Gas producer shut in.

GOOSE CREEK

Wm. Scott Upper League, Lower League and Labor and Goose Creek Bay. **Means of Discovery:** Broken surface and gas seeps. **Discovery Well:** T. C. Rucker et al's Gaillard 2, 1906, 800 bbls, 1600 ft. **Structure:** Regarded as probably a very deep seated salt dome; no cap rock or salt has been encountered despite drilling of several deep tests. **Producing Formations:** Pliocene-Miocene and Oligocene sands at 1000 to 4600 ft; one well producing a little oil at 5875-5894 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 1000. **Daily Production, July 1, 1938:** 1644 bbls. **Estimated Ultimate Recovery:** 90,000,000 bbls. **Production Through June, 1938:** 76,375,794 bbls. **Indicated Remaining Reserve:** 13,624,206 bbls. **Deepest Hole:** Humble Oil & Refining Co.'s Simms-Smith 74, abnd in February, 1929, in sticky shale at 6967 ft. **Casing Programs:** Gulf Oil Corp., 10-in, 600 ft; 7-in, 1400 to 4441 ft. Humble Oil & Refining Co., 10-in, 600 ft. Miramar Oil Corp, 10¾-in, 668 ft; 7-in, 4483 ft. **Oil Outlets:** Humble Pipe Line Co., 8-, 10- and 12-in; Gulf Pipe Line Co., 6-in. **Range of Gravity:** 20-36. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Humble, Gulf Oil Corp., Southern Exploration Co., Port City Oil Co., Gulf Coast Oil Corp., Powell Oil Co., Atlantic Oil Producing Co., Ferrel & Ehrhart, Newton & Lillie, Wier Oil Co. **Heaving Shale:** Is found under Smith & Mitchell tracts in Vicksburg formation. Around 700 ft of heaving shale has been penetrated. Top of heave is found at 6170 ft.

HALE*

In ne corner of county, eight mi ne Humble, centering around R. Hanks Survey. **Means of Discovery:** Worked geophysically about 1928 by Gulf Production Co., Shell Petroleum Corp., and Humble Oil & Refining Co. **Extent of Development:** W. R. Alexander et al's Hale 1, abnd May, 1932, 5086 ft, had small gas show at 2500 ft and oil show 3300 ft. W. U. Paul's House 1, M. Magruder Survey, dry at 7329 ft in Cockfield, Jan., 1935, showing of oil in Frio at 3822 ft. House 2, 100 ft n of House 1, quit at 7765 ft, salt water sands in Cockfield, April, 1935; salt water. Medford & Burk's Pruitt 1, G. Brooks Survey, dry 7646 ft, Oct., 1937. **Principal Leaseholders:** Gulf Oil Corp., Sun Oil Co. **Remarks:** See Crosby.

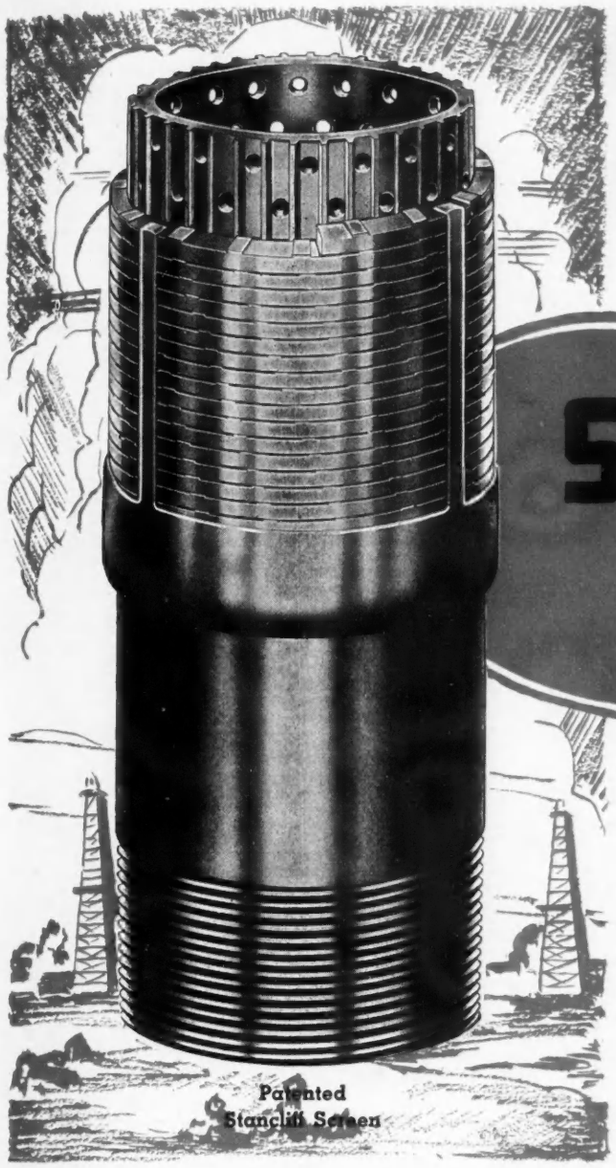
HOCKLEY

Four mi s Hockley; in following surveys: T. A. Sulley, A. B. Langermann, S. Everett, E. Ehrenberg, A. Gulliver, T. Cobhill, H.T.&B. R.R. No. 1, and J. Hudson. **Means of Discovery:** Surface indications. **Discovery Well:** Texas Exploration Co.'s Warren 13, Oct. 15, 1923, 25 bbls, 26 gravity, 1820 ft. **Structure:** Salt dome, top cap rock 115 ft. **Producing Formations:** Oil production from cap rock and Frio at 1800 ft and 2400 ft. **Approximate Elevation:** 180-200 ft. **Productive Acres:** 10. **Daily Production, July 1, 1938:** None. **Production Through June, 1938:** 16,000 bbls (abn field). **Deepest Hole:** Zeni Oil Co.'s Perkins 1, A. Sherrell Survey, quit at 7510 ft, July, 1936. **Casing Programs:** Stanolind Oil & Gas Co., 18-in, 164 ft; 13-in, 1667 ft. **Oil Outlets:** None. **Range of Gravity:** 22 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Humble, Stanolind Oil & Gas Co. **Remarks:** Salt mined from shallow salt plug.

HUMBLE

Under and to the east of Humble townsite. Surveys: W. B. Adams, J. B. Jones, J. Strange, R. Dunn, J. B. Stevenson, W. T. Charles, W. W. Williams, E. Ruhl, G. H. Scott, J. Dunman, H.E.&W.T. R.R. Nos. 5 and 6, G. Joy. **Means of Discovery:**

*Prospect. †Salt dome, no production. ‡Gas field.



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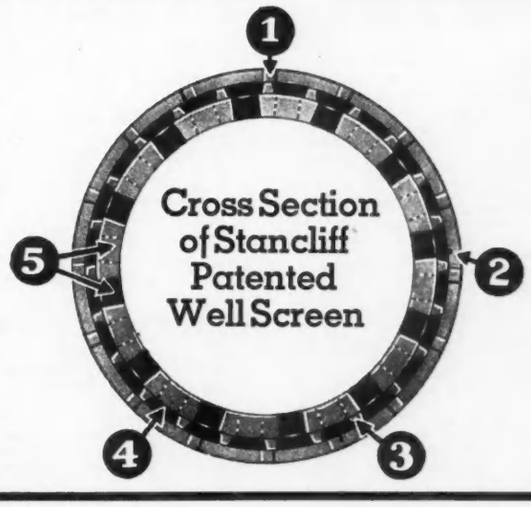

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Surface elevation, gas seeps, paraffin dirt. D. R. Beaty's No. 1, Jan. 9, 1905, 5000 bbls, 700 ft. **Structure:** Salt dome, top cap rock 1000 ft, top of salt 1200 ft. **Producing Formations:** Cap rock and sands of Miocene, Oligocene, Jackson, and Claiborne age, at depths of 700 to 5670 ft. Field had many prolific wells, including over 50 more than 5000 ft deep. **Average Sand Thickness:** 60 ft. **Productive Acres:** 2400. **Daily Production, July 1, 1938:** 3215 bbls. **Estimated Ultimate Recovery:** 130,500,000 bbls. **Production Through June, 1938:** 123,200,284 bbls. **Indicated Remaining Reserve:** 7,299,716 bbls. **Deepest Hole:** Benedum & Trees' W. L. Foley 1, sw flank of dome, J. Ryan Survey, abnd in shale 8181 ft, July 1, 1930 in Cook Mountain. **Casing Programs:** The Texas Co., 10-in. 700 ft; 7-in, 2700 to 4600 ft. Humble Oil & Refining Co., 15⅝-in, 1137 ft; 9⅝-in, 4250 to 4588 ft. A. W. Crosby, 10¾-in, 39 ft; 5-in, 1800 to 2050 ft. **Oil Outlets:** The Texas Pipe Line Co., 10- and 8-in; Magnolia Pipe Line Co. 8-in; Sun Pipe Line Co., 6-in; Humble Pipe Line Co., 8-in. **Range of Gravity:** 17-45 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** The Texas Co., Humble Oil & Refining Co., Gulf Oil Corp., Sun Oil Co., Continental Oil Co., South Texas Petroleum Co., Southern Petroleum Co., Louisiana Oil Refining Corp., J. D. Clay, Martin, Drake & Jones, E. M. Wilson Oil Co., J. H. Burt, Jno. Deering, Rio Bravo Oil Co., A. W. Crosby. **Heaving Shale:** Is found under Faley, Lee, Stevenson, Bender, Invincible, and Westheimer tracts. Top of heave is usually found at 3058 ft, 4647 ft, 4801 ft. Cullen & West was first to drill through heaving shale to get production. Lee 3 was drilled to 5133 ft, set 9⅝-in casing at 4813 ft and made an oil producer. Top of heave was found in this well at 4801 ft.

MOUNT HOUSTON*

Northeast of Houston, and s of Mount Houston, centering around the J. Callahan Survey. **Means of Discovery:** Reflection seismograph, torsion balance, Shell Petroleum Corp., Stanolind Oil & Gas Co., The Texas Co., March, 1935. **Principal Leaseholders:** Shell Petroleum Corp., The Texas Co., Gulf Oil Corp.

MYKAWA

One-half mi sw of Mykawa in W. J. Lovett, W. B. Walker, and J. C. Megginson, F. J. Rothass, Minnetex Subdivision. **Means of Discovery:** Gas in old wells and surface indications; torsion balance survey of North American Exploration Co. (1928) for H. C. Cockburn gave evidence of deep salt dome. **Discovery Well:** Humble Oil & Refining Co.'s W. H. Irvin 2, 50-million foot gas well, 4189 ft, Aug. 19, 1929. **Structure:** Regarded as possible deep-seated salt dome, although no cap rock or salt has been encountered. **Producing Formations:** Miocene and Oligocene (Frio) sands at 4100-4900 ft; on e side, Frio sands found from 4380 to 4892 ft. **Approximate Elevation:** 30-50 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 300; 300 developed. **Daily Production, July 1, 1938:** 962 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 3,266,666 bbls. **Indicated Remaining Reserve:** 1,733,334 bbls. **Deepest Hole:** West Production Co.'s W. Lang 1, J. Hall Survey, quit at 7355 ft, heaving shale, Sept., 1935; Vicksburg topped at 5997 ft. **Casing Programs:** West Production Co., 10¾-in, 1200 to 1450 ft; 7-in, 4100 to 4475 ft. **Oil Outlet:** Humble Pipe Line Co., 8-in. **Range of Gravity:** 27-30 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Crown Central Petroleum Corp. and Framer Oil & Gas Corp. (jointly), Hamil & Smith, Higgins Oil & Fuel Co., Watts Drilling Co., West Production Co., Sterling Oil & Refining Co., Danciger Oil & Refining Co., Alpha Petroleum Co. **Remarks:** West Production Co.'s J. Raymon et al 1, extended the field e and discovered a Frio sand at 4525 ft, and started a drilling campaign for that area. The east side of the field was called East Mykawa. Gas production taken by Houston Pipe Line Co. on east side of Mykawa, one well is dr to each 10 acres. **Heaving Shale:** Is found under Lang, Farmer and Minnetex leases in Vicksburg formations. Top of heave is logged at 6630 ft and 6 ft of shale was encountered and at 7001 ft over 355 ft of the shale was encountered.

OGBURN*

South of Cypress, Jno. C. Ogburn Survey. **Means of Discovery:** Cranfill-Reynolds Co. torsion balance, 1930. Later geophysical work by others did not show evidence of dome or structure. **Extent of Development:** Cranfill-Reynolds Co.'s Rorick 1, ne corner Ogburn Survey, quit at 5420 ft, July, 1930. Had three oil shows, one each immediately above and below 2200 ft, and one around 3300 ft. General Crude Oil Co.'s Rorick 1, Ogburn Survey, dry at 6863 ft, Sept., 1934. Had salt water sand from 6423 to 6457 ft. Hebert, Still and Hooper's A. Backman 1, J. Ogburn Survey, quit at 6516 ft, salt water in Cockfield, July, 1935. Had show of gas at 6435 to 6448 ft. Drill stem test showed salt water. Walter Goldston et al's Weingarten 1, H. & T. C. Section 39, quit in Cockfield at 6603 ft, Feb., 1935. Ne of Ogburn, H. M. Harrel and O. L. Brace's Bullock 1, C. Bowman Survey, dry in Yegua at 7005 ft, April, 1937. O. W. Killam's Sweeney Estate 1, G. Williams Survey, topped Cockfield 6386 ft, 5 in oil sand 6535-45 ft, dr to 6731 ft, set 5½-in csg at 6634 ft, perforated 6526-38 ft, 12 shots swabbed salt water, abnd April, 1938. Same operator's Hamblin 1, W. C. R. R. No. 11, slight show oil 6633, showed salt water on drill stem test, abnd 7015 ft, salt water sand May, 1938. Same operator's Dodd 1, W. C. R.R. Section 12, dr shale 3950 ft, July, 1938.

PIERCE JUNCTION

Six mi sw Houston; in following surveys: I. & G. N. R.R. No. 47, J. Kopman, B.B.B. & C. R.R. No. 1028, and J. Hamilton Nos. 51, 52, 53, 96 and 98. **Means of Discovery:** Surface elevation, gas seeps, and paraffin dirt. **Discovery Well:** Gulf Production Co.'s Taylor 2, 75 bbls, 3525 ft, Feb. 19, 1921. **Structure:** Salt dome, top cap rock 700 ft, salt 950 ft. **Producing Formations:** Miocene middle Oligocene, Frio and lower Oligocene sands at 3142 to 5566 ft. Numerous good wells over 5000 ft. Vicksburg sand at 6250 to 6710 ft, one well had oil sands at 6943 ft. **Average Sand Thickness:** 45 ft. **Productive Acres:** 320. **Daily Production, July 1, 1938:** 3128 bbls. **Estimated Ultimate Recovery:** 40,000,000 bbls. **Production Through June, 1938:** 32,330,401 bbls. **Indicated Remaining Reserve:** 7,669,588 bbls. **Deepest Hole:** Benedum & Trees Oil Co.'s Settegast 1, sw flank test, quit at 7165 ft, Oct., 1934, in Jackson. **Casing Programs:** Rio Bravo Oil Co., 10-in, 1400 ft; 6⅝-in, 4100 to 4800 ft. Hamil & Smith, 10-in 92 to 265 ft; 12½-in, 1218 ft; 6- or 7-in, 3365 to 4640 ft. Gulf Oil Corp., 10-in, 1065 ft; 6⅝- or 9⅝-in, 3800 to 5770 ft. **Oil Outlets:** Humble Pipe Line Co., 6-in; Shell Pipe Line Co., 10-in; Gulf Pipe Line Co., 6-in. **Range of Gravity:** 21-41. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Rio Bravo Oil Co., Gulf Oil Corp., Navarro Oil Co., Moody Corp., H. R. Cullen, Humble Oil & Refining Co., Anderson & Plummer, T. G. Shaw et al, Abercrombie & Harrison, Warner-Quinlan Co., Tilton & Perot, South Texas Production Co., Hamil & Smith. **Remarks:** Navarro Oil Co. discovered Vicksburg production, 1934, in Cain A-3, a workover.

RED BLUFF*

Four and one-half mi se LaPorte, Wm. P. Harris Survey, jutting into Trinity Bay. **Means of Discovery:** Torsion balance, Sloane Prospecting Co., 1931. **Extent of Development:** Red Bluff Oil Co.'s Seureau 1, quit at 6028 ft, March, 1934.

SATSUMA

Twelve mi nw of Houston, centering the F. Fry, WCRR Section 2. **Means of Discovery:** Torsion balance, Amerada Pet. Corp. and Stanolind Oil & Gas Co., 1934-35, Humble Oil & Refining Co., 1928. **Discovery Well:** Amerada-Stanolind's Dopsalus 1, 2,400,000 cu ft gas June 5, 1936. June 6, it started making 4.3 bbls 44.8 gravity pipe line oil per hour through 13/64-in choke from 6820 to 6822 ft. Potential showed 128 bbls daily. **Type Structure:** Regarded as deep seated salt dome. **Approximate Elevation:** 115 to 130 ft. **Producing Formations:** Upper Saline Bayou 6803 to 6834 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 800; 220 developed. **Daily Production, July 1, 1938:** 380 bbls. **Estimated Ultimate Recovery:** 4,000,000 bbls. **Production Through June, 1938:** 214,611 bbls. **Indicated Remaining Reserve:** 3,785,389 bbls. **Deepest Hole:** Amerada-Stanolind's L. Dopsalus 1, discovery well, made several tests 6800 ft, dr salt water sand 6885 ft, dr to 7520 ft, pb and comp 6822 ft. **Casing Programs:** Amerada-Stanolind, 10-in, 1395 ft; 7-in, 6800 ft. **Oil Outlets:** Humble Pipe Line Co., 4-in. **Gravity Oil:** 42-45. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Amerada Pet. Corp. and Stanolind Oil & Gas Co. **Remarks:** Was called Fairbanks.

SHELDON*

Between Deversdale and Crosby and nw of Sheldon, centering around the southern part of the Victor Blanco Survey. **Means of Discovery:** The Texas Co., Shell Petroleum Corp., Stanolind Oil & Gas Co., and Humble Oil & Refining Co. geophysical work in 1934-35. The Texas Co.'s geophysical work reported unfavorable. **Extent of Development:** A. C. Hill's Swilley B-1, Victor Blanco Survey, dry at 7566 ft, March, 1936. Swilley 1-A, w of Swilley B-1, higher than Swilley 1-B, quit at 7547 ft, March, 1936. **Principal Leaseholders:** A. C. Hill, Shell Petroleum Corp., The Texas Co., Humble Oil & Refining Co., Pan American Production Co., The California Co., Sinclair Prairie Oil Co.

SOUTH HOUSTON

Seven mi s of Houston, surrounding city of South Houston, H. & T. B. Section 5, Mary Nichols, South Houston Garden Subdivision 6 and 7, Callahan and Vance surveys. **Means of Discovery:** Reflection seismograph, torsion balance, Stanolind Oil & Gas Co., 1934. **Discovery Well:** Stanolind's Drilling District 17 (Fee 1), 4665-80 ft, June 29, 1935, 12 bbls fluid per hour, 25.6 gravity oil. Salt water encroachment forced operators to drill deeper to Vicksburg. Well tried to blow out at 5682 ft, Sept. 15, was pb and drilled to 6050 ft and abnd Nov. 21, 1935. **Structure:** Salt dome, top of the rock salt at 4662 ft; reported one of sharpest domes in Gulf Coast. **Producing Formations:** Basal Miocene sands 3845-4095 ft; 4135 ft; Lower Marginulina-Frio sands of the Oligocene formation 4535-4894 ft. **Approximate Elevation:** 30-50 ft. **Average Sand Thickness:** Miocene 50 ft; Oligocene 150 ft. **Productive Acres:** 650; 630 developed. **Daily Production, July 1, 1938:** 3080 bbls. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production Through June, 1938:** 3,850,562 bbls. **Indicated Remaining Reserve:** 6,149,438 bbls. **Deepest Hole:** Stanolind's Drilling District 10 quit at 6850 ft salt, March, 1936. **Casing Programs:** Stanolind, 16-in. 90 ft; 13⅜-in, 90 ft; 5- or 9-in, 1450 to 1480 ft; 5¾-in, 4000 to 4800 ft. **Oil Outlet:** Stanolind Pipe Line Co., 6-in. **Range of Gravity:** 19.5-25.5. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Stanolind. Several independent operators have outside acreage. **Remarks:** One well is permitted to each 16 acres or one well to 4 city blocks. The city lots are divided into drilling districts. Johnson & Johnson turned the block to Stanolind Oil & Gas Co. and secured leases on the town lots from all parts of the world.

SOUTHEAST CROSBY*

Six mi se Crosby, Hannah Nash, L. Hemingway, George Ellis and W. Gregory Surveys. **Means of Discovery:** Surface indications seismograph, Shell Petroleum Corp., 1929; Sloan Prospecting Co., torsion balance. **Extent of Development:** Five deep tests by Sloane Prospecting Co., ranging from 5520 to 6564 ft deep, and finding various oil and gas showings including gas around 1500, 3200, 4000 and 4400 ft, and oil around 4000, 4500, 4800 and 5950 ft. H. S. DeArman's Tyrell & Garth 1, gas sands 4140-4205 ft, top Frio 6137 ft, slight show 6135-6200 ft, abn 7029 ft, May, 1937. **Principal Leaseholders:** Shell Petroleum Corp., Gulf Oil Corp.

TOMBALL

Includes town of Tomball and embraces all or portions of following surveys: Joseph House, John H. Edwards, Wm. Hurd, C. Goodrich, Jno. M. Hooper, Chauncey Goodrich, I. & G. N. R. R. Co., A. Scenechal, Claude N. Pillot, Wilhelm Usener, J. Pruitt, E. Smith, T. A. Duclose, Hahl, C. Marriott, and R. Hubbard. **Means of Discovery:** Surface and sub-surface geology; torsion balance, Vacuum Oil Co., 1929; also geophysics by others, 1933. **Discovery Well:** Magnolia Petroleum Co. and Humble Oil & Re-

*Prospect. †Salt dome, no production. ‡Gas field.

fining Co.'s J. F. W. Kobs 1, John M. Hooper Survey, 69 bbls 41 gravity oil per hour through ½-in choke from Cockfield sand at 5547-5569 ft, May 27, 1933. **Structure:** No dome material reached, but regarded as possibly a deeply buried salt dome, as other structures along the Raccoon Bend-Conroe trend; in fact, closely resembles Conroe. Is circular in shape. Has 800 ft structural uplift, 350 ft total closure, 250 ft productive closure, and oil in about 25 ft of the productive closure. Several faults, averaging about 150 ft displacement, cut across the structure ne-sw. **Producing Formations:** Gas sand 2045-60 ft. Several sands at short intervals but probably connected by faulting, in Cockfield at 5505-5682 ft. **Approximate Elevation:** 150 to 210 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 8150; 7600 developed. **Daily Production, July 1, 1938:** 6340 bbls. **Estimated Ultimate Recovery:** 50,000,000 bbls. **Production Through June, 1938:** 10,070,009 bbls. **Indicated Remaining Reserve:** 39,929,991 bbls. **Deepest Hole:** Magnolia's Wm. Martens 1, dry at 7438 ft, June, 1933, in Lower Saline Bayou. **Casing Programs:** Humble, 9-in, 950 to 970 ft; 5-in, 5525 to 5600 ft. **Oil Outlets:** Humble Pipe Line Co., 8-in; Magnolia Pipe Line Co., 6-in. Humble built a 120-mile, 10-in gas pipe line in 1937 from the field to industrial centers in Houston, Baytown, Port Arthur and Port Neches. **Range of Gravity:** 37-41. **Rigs Running July 1, 1938:** Three. **Principal Leaseholders:** Humble and Magnolia jointly control large percentage of field; Amerada Petroleum Corp. and Stanolind Oil & Gas Co., jointly; The Texas Co., Continental Oil Co., Windsor Oil Co., Shell Petroleum Corp., Sun Oil Co. **Remarks:** Humble has a gasoline plant in this field. One well is dr to each 20 acres. Gas/oil ratio is 2500 to 1.

HOUSTON COUNTY

KITTRELL

Six mi e of Weldon, centering C. McEllis Survey. **Means of Discovery:** Surface geology, 1932, and later worked with geophysical instruments. **Discovery Well:** Boone Brother's Trinity State Bank 1, September 7, 1934, 1000 bbls, 24.4 gravity oil from 2036 ft. **Type Structure:** Salt dome, top gypsum 3772 ft, top salt 3850 ft. **Approximate Elevation:** 300 to 311 ft. **Producing Formations:** Lower Eocene, 1944-1981 ft, Reklaw sands 1925-1995 ft; Carrizo sands at 2022-54 ft. One well drilled saturated oil sands in Cook Mountain at 1085 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 120. **Daily Production, July 1, 1938:** 709 bbls. **Estimated Ultimate Recovery:** 2,500,000 bbls. **Deepest Hole:** Humble Oil & Refining Co.'s Texas Long Leaf Lumber Co. 1, dry at 3870 ft, November, 1934. **Casing Programs:** Humble Oil & Refining Co., 9-in, 305 ft; 7-in, 1975 ft. **Oil Outlets:** Tank cars. **Gravity Oil:** 24.3. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Boone Brothers, Humble Oil & Refining Co., Sun Oil Co.

JASPER COUNTY

BESSAMAY*

Northwest of Bessamay, centering around J. D. Johnson Survey. **Means of Discovery:** Reflection seismograph and torsion balance, Sun Oil Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholder:** Sun.

BUNA*

Northeast of Buna, centering around H&TC No. 74, S. Crawford and J. A. Richson Surveys. **Means of Discovery:** Geophysical work by Humble Oil & Refining Co., Sun Oil Co., Republic Production Co., Gulf Production Co. **Extent of Development:** Republic Production Co.'s Sabine Tram 1, dry 7615 ft in Yegua, May, 1935; gas showed around 7422 ft. **Principal Leaseholders:** Sun Oil Co., Humble Oil & Refining Co., Republic Production Co., Gulf Oil Corp., E. L. Smith Oil Co.

EVADALE*

Southeast of Evadale, centering around B. Richardson Survey. **Means of Discovery:** Geophysical work, Republic Production Co., **Principal Leaseholder:** Republic Production Co.

KEITHTON*

Six mi se of Jasper, centering Blake, Williams, Turner and Morgan Surveys. **Means of Discovery:** Geophysics, Sun Oil Co. **Principal Leaseholder:** Sun Oil Co. (8000 acres).

MAGNOLIA SPRINGS-LEGRAND*

Near Tyler-Jasper County lines and w of Magnolia Springs, centering around A. Wright and E. O. Legrand Surveys. **Means of Discovery:** Geophysical work showed fair prospect, later worked by reflection seismograph and torsion balance, Magnolia Petroleum Co., 1937. **Extent of Development:** In E. O. Legrand sur, Alpha Petroleum Co.'s Cartwright 1, salt water sand at 5100 ft, abn June, 1934. J. G. Mayo et al's Cartwright 1, Legrande sur, sd 6500 ft, July, 1938. **Principal Leaseholder:** Magnolia Petroleum Co.

ROCKLAND

Two mi ne Rockland, B. Addison, P. Smith Surveys. **Means of Discovery:** Surface indications. Drilling began in 1902. **Discovery Well:** Record of first production was in 1928. Rio Neches Oil Co.'s Boykin 1, 8 bbls daily, 1932 ft, 1273 ft. **Type Structure:** Structure rather than salt dome type. **Producing Formations:** Sands around 1275 ft, considered base of Jackson or top of Yegua. **Average Sand Thickness:** 6 ft. **Productive Acres:** 20. **Daily Production, July 1, 1938:** abn. **Estimated Ultimate Recovery:** 50,000 bbls. **Production Through June, 1938:** 34,000 bbls. (abn). **Indicated Remaining Reserve:** 16,000 bbls (abn). **Deepest Hole:** Two tests dr below 3000 ft. **Casing Programs:** Rio Neches Oil Co., 6⅝-in, 1260 ft. **Oil Outlet:** Tank cars. **Range of Gravity:** 21-25. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** East Texas Oil Co., Great Lakes Oil Co., Gulf Oil Corp., Humble Oil & Refining Co., The Texas Co., Houston Oil Co., Southern Petroleum Co.

ROGANVILLE*

Eight mi e of Jasper, centering around A. J. Youngblood, T. C. Holmes, H. H. Hogh Surveys. **Means of Discovery:** Geophysics, Mid-Kansas Oil Co., 1933. **Extent of Development:** Marathon Oil Co.'s Jasper County Lumber Co. 1, quit at 5614 ft in Crockett, August, 1935, in salt water sand from 3443 to 3473 ft. **Principal Leaseholder:** Marathon Oil Co. Company released this block as rentals came due.

SARAH GRAY*

Nine mi n Beaumont, w part Sarah Gray Survey, sw corner Jasper County, and extending across river into S. K. Vanmeter Survey, Hardin County; e½ of J. W. Spoeffel Survey. **Means of Discovery:** Surface indications; shallow drilling; geophysics, 1932. **Extent of Development:** Two deep tests in addition to shallow drilling. Republic Production Co.-Houston Oil Co.'s Ben Andrews Fee 1, Vanmeter Survey, abn 1932, in shale at 7420 ft. Gulf Production Co.'s Miller-Vidor 1, Gray Survey, quit at 6970 ft, early 1933. **Remarks:** David B. MacDaniels has block of 3000 acres, acquired in November, 1935. The leases were taken for five years. He worked area with torsion balance. Magnolia Pet. Co. worked area with reflection seismograph, 1935 and 1936.

JEFFERSON COUNTY

AMELIA

Four mi w of Beaumont, centering C. Williams and A. Savery Surveys. **Means of Discovery:** Humble Oil & Refining Co., torsion balance and reflection seismograph, 1934. Magnolia Petroleum Co., torsion balance, 1935. Reflection seismograph. Sun Oil Co., Stanolind Oil & Gas Co., 1935. **Discovery Well:** Humble Oil & Refining Co.'s Langham 1, February 12, 1936, 257 bbls in 12 hrs, 29.2 gr oil, 6778 to 6791 ft. Potential test February 15, 1936, 476 bbls 28.5 gr daily, ¼-inch choke, tubing pressure 675 pounds; casing pressure 1000 pounds. Gas/oil ratio 289 to 1. **Structure:** Deep seated salt dome. **Producing Formations:** Frio sands, 6778 to 6791 ft; well was 400 ft in formation. **Approximate Elevation:** 30-40 ft. **Average Sand Thickness:** 33 ft. **Productive Acres:** 1300; 1250 developed. **Daily Production, July 1, 1938:** 3309 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production Through June, 1938:** 2,068,569 bbls. **Indicated Remaining Reserve:** 17,931,431 bbls. **Deepest Hole:** Humble's Hebert Broussard 1, C. Williams Survey, salt water sand 6858 ft, dr to 8261 ft, abn April, 1936. **Casing Programs:** Humble, 13-in, 219 ft; 9-in, 1400 to 1500 ft; 5 or 5½-in, 6775 ft. **Oil Outlets:** Humble Pipe Line Co., 6-in. Adjacent lines leading to Beaumont and Port Arthur area. **Gravity Oil:** All sands, 27-29. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Humble, Normandie Oil Co. **Remarks:** Spaced 466 ft apart and 233 ft from the property line. Gas/oil ratio 2000/1. Potential taken through ¼-inch chokes. See West Beaumont.

BIG HILL

Eight mi se Hampshire; S. Eaton, E. L. & R. R. No. 373, J. L. Dyson, D. D. Dyson and Wm. McFaddin Surveys. **Means of Discovery:** Elevation, gas. **Discovery Well:** Houston Oil Co.'s Pipkin-Davis 1, March 29, 1923, 35 bbls, 1735 ft. **Structure:** Salt dome, top cap rock 200 ft (known since 1901). **Producing Formations:** Several small oil wells in Plio-Miocene sands at 1700-1800 ft, 4913-20, gas at 5900-5958 ft. **Average Sand Thickness:** Southeast flank, 50 ft of sand logged in The Texas Co.'s Pipkin 1, 5900-58 ft. **Productive Acres:** Only a few. **Daily Production, 1938:** None. **Estimated Ultimate Recovery:** No estimate. **Production Through June, 1938:** 14,000 bbls. **Deepest Hole:** Stanolind's Pipkin 5-A, 7498 ft. Stuck drill stem, fsh, July, 1938. **Casing Programs:** The Texas Co., 13⅜-in, 1330 ft; 6⅝ or 9⅝-in, 4970 ft. Stanolind Oil & Gas Co., 13-in, 1300 to 1700 ft; 7-in, 4900 to 6590 ft. **Oil Outlets:** None. **Gravity Oil:** 4913 ft, 36. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** The Texas Co., Houston Oil Co., Stanolind Oil & Gas Co. **Remarks: Heaving Shale:** Is found under Pipkin Davis tracts around 5790 ft, 5900 ft, and 6670 ft in Heterostegina formation. From 50 to 80 feet of heaving shale has been penetrated.

CHEEK

Southwest of Spindle Top, centering around C. Hillibrandt Survey. **Discovery Means:** First torsion balance by H. C. Cockburn in 1929. From 1933 to 1938 the area was worked with reflection and torsion balance by Humble Oil & Refining Co. Shell Petroleum Corp. worked to the south in 1936 and 1937. Subsurface information and Humble Oil & Refining Co.'s Jefferson Land Co. 1, north well cut a fault and lead to the drilling of discovery well. **Discovery Well:** Glenn H. McCarthy's Broussard Trust 1, January 10, 1938, 122 bbls, 40 gravity oil, ⅛ and 9/64-inch choke, 7725 ft. **Type Structure:** Dome. **Approximate Elevation:** 9-29 ft. **Producing Formations:** Frio sands 7690 to 7725 ft. **Average Sand Thickness:** 50 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 126 bbls. **Estimated Ultimate Recovery:** 3,000,000 bbls. **Production Through June, 1938:** 19 993 bbls. **Indicated Remaining Reserve:** 2,980,007 bbls. **Deepest Hole:** Humble's Jefferson Land Co. 1, dr to 8458 ft, pb and tested 8162 ft, 7742 ft, 7830 ft, 7131 ft, 7831 ft and showed gas and salt water; abn May, 1937. **Casing Programs:** McCarthy, 10¾-in, 2460 ft; 7-in, 7732

*Prospect. †Salt dome, no production. ‡Gas field.

ft. **Oil Outlet:** Gulf Pipe Line Co., 4-in. **Gravity Oil:** 40. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Glenn H. McCarthy, Humble, Shell, Stanolind, Sun, Amerada. **Remarks:** H. Hebert and S. Smith promoted discovery well in this area. **Heaving Shale:** Has been found near this field.

CLAM LAKE

West of Sabine, centering around S. A. Pace Survey. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1928. Humble Oil & Refining Co. also showed prospect favorably by geophysics. Shell torsion balance in 1925 failed to give dome indications. Only Shell and Humble had showed this prospect as a dome. **Discovery Well:** Shell's W. P. McFaddin 1, Dec. 27, 1937, 15 bbls hour, 34 gravity oil, ¼-inch choke, 5929 ft. **Type Structure:** Dome. **Approximate Elevation:** At sea level. **Producing Formations:** Miocene sands 5913 to 5929 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 71 bbls. **Estimated Ultimate Recovery:** 2,500,000 bbls. **Production Through June, 1938:** 16,063 bbls. **Indicated Remaining Reserve:** 2,483,937 bbls. **Deepest Hole:** Shell's McFaddin Trust 2, 8198 ft, salt, run 5½ csg, July, 1938, to test around 5900 ft. **Casing Programs:** Shell Petroleum Corp., 16-89 ft; 10-in, 1896 ft; 9⅝-in, 5915 ft. **Oil Outlet:** Barge. **Gravity Oil:** 34. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Shell, Humble. **Remarks:** Shell made 15 drill stem tests on the discovery well from 5300 to the bottom of the hole before well was comp.

FANNETT

Two and a half mi sw Fannett; J. Blackman, M. Bowes, W. H. Smith Surveys. **Means of Discovery:** Seismograph, Gulf Production Co., 1925. **Discovery Well:** Gulf's Bordages 2, January 20, 1927, 50 bbls. **Structure:** Salt dome, top cap rock 870 ft, salt 2200 ft. **Producing Formations:** Miocene sands 3250-4520 ft; Middle Oligocene 4849-5020 ft; Lower Oligocene (Frio) 5608-5670 ft, 6535 to 6615 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 100. **Daily Production, July 1, 1938:** 310 bbls. **Estimated Ultimate Recovery:** 3,500,000 bbls. **Production Through June, 1938:** 2,312,390 bbls. **Indicated Remaining Reserve:** 1,187,610 bbls. **Deepest Hole:** Gulf Oil Corp.'s Spencer 1, dr to 7293 ft in salt, pb and tested 5280 ft. **Casing Programs:** Gulf Oil Corp., 10-in, 1300 to 1500 ft; 5, 6⅝ or 9⅝-in, 3800 to 5995 ft. **Oil Outlet:** Gulf Pipe Line Co., 6-in. **Range of Gravity:** 26-38. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** Gulf Oil Corp. **Remarks: Heaving Shale:** Is found under Burrell, Junker and Bordages tracts in Miocene and Oligocene formation.

GILBERT RANCH*

Seven mi s of China, centering I. B. Pipkin, J. G. Grant, J. Ricord, T. & N. O. Sections 63, 74 and 75. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1934. Magnetometer and torsion balance, David B. MacDaniels. Various other torsion balance and reflection seismograph parties have worked this area. Geophysical work was done by Humble Oil & Refining Co. **Extent of Development:** MacDaniels' Gilbert Ranch 1, J. Ricord sur, dry 7305 ft, Dec. 1936; Gilbert Ranch 2, J. G. Grant sur, abn 7886 ft, April, 1937. **Principal Leaseholders:** Sun Oil Co., David B. McDaniels. **Remarks:** Humble Oil & Refining Co. has lease on over 7000 acres of the S. W. Pipkin land s and e of Big Hill field and scattered through the s central portion of the county. East of Lawhorn sur, Stanolind Oil & Gas Co., Sun Oil Co., Felmont Oil Corp., own acreage.

*Prospect. †Salt dome, no production. ‡Gas field.

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HOUSTON

GULF OF MEXICO*

South of B. Howard Survey, 150 feet offshore of Jefferson County in Block 72. **Means of Discovery:** Reflection seismograph and torsion balance, Humble Oil & Refining Co., Shell Petroleum Corp., Magnolia Petroleum Co., 1936 and 1937. **Extent of Development:** I. E. Harwell's State 1, stuck dr stem 5821 ft, abn March 1938. At the senate investigation hearing of the state land department operators testified that gas sands were cored at 2640 to 2700 ft, and oil sands from 2796 to 2812 ft, and that the sands were good enough to make a well. **Principal Leaseholders:** I. E. Harwell, Humble Oil & Refining Co., Shell Petroleum Corp., Magnolia Petroleum Co.

HAMSHIRE*

Northwest Hamshire, T&NO Section 86. **Means of Discovery:** Seismograph, Shell Petroleum Corp., 1928; later checked by torsion balance. **Extent of Development:** Shell's Heisig 1, abnd 7305 ft in 1929; had oil show at 5000 ft and another slight show at 7100 ft. **Remarks:** S of this prospect Gulf Production Co. acquired 3500 acres in September, 1934. Marrs McLean has 3000 acres in this area up to Fannett field. Magnolia Petroleum Co. has acreage in T&NO Sec. 142 and 154. (See Winnie).

JEFFERSON COAST

Offshore of Jefferson County in Gulf of Mexico, in Tract 8. **Means of Discovery:** Refraction and reflection seismograph, torsion balance, core drilling by Humble Oil & Refining Co. from 1932 to 1937. **Discovery Well:** Humble Oil & Refining Co.'s McFaddin-State 1, topped salt 2603 ft, abn, May, 1938. **Type Structure:** Salt dome, topped anhydrite 1412 ft, top salt 2603 ft. **Extent of Development:** Humble Oil & Refining Co. has drilled several shallow wells on land, the deepest being 6097 ft in heaving shale: **Principal Leaseholder:** Humble. **Heaving Shale:** Is found under McFaddin lease in this area in Miocene formation around 2257 and 6094 ft. **Remarks:** Sometimes referred to as McFaddin Beach.

LABELLE

Centering around W. B. Burton and B. Blackman Survey, Abstract 8. **Means of Discovery:** Torsion balance, Vacuum Oil Co., 1929. Checked negative by seismograph after test was drilled. Later geophysical work by Sun Oil Co. **Discovery Well:** Sun Oil Co.'s Hebert Broussard 2, January 13, 1937, 8211 to 8218½ ft, spraying gas and distillate, ⅛-in ch. Later was shut in. First commercial oil well, Sun Oil Co.'s Broussard Hebert 3 cored sand showing oil at 8622 ft, and when cutting stuck dr pipe, well started blowing out, April, 1938. Made 1066 bbls 46.5 gravity oil and 83,000,000 cu ft gas daily through 4½ and 1½-in dr pipe. **Type Structure:** Considered deep seated salt dome. **Approximate Elevation:** 5-25 ft. **Producing Formations:** Marginulina sands of Oligocene at 8206 to 8219 ft, 8600 ft. **Average Sand Thickness:** 11 ft. **Productive Acres:** 180; 40 developed. **Daily Production, July 1, 1938:** 892 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 103,892 bbls. **Indicated Remaining Reserve:** 896,108 bbls. **Deepest Hole:** Sun Oil Co.'s Ward Estate 1, s of discovery well, tried to blow out 8562 ft, set 9⅝-in csg 8538 ft, cored additional sand to 9951 ft where 7-in csg was set, topped sand 10,043 ft, blew out, killed, dr to 10,147 ft, pb and tested 10,015 ft, well made gas, was killed, pb 8890 ft, tested and abn Dec., 1937. **Casing Programs:** Sun Oil Co., 18⅝-in, 50 ft; 13⅜-in, 1250 ft; 9⅝-in, 8000 to 8500 ft; 7-in at lower depths. **Oil Outlet:** Barge. **Gravity Oil:** 8622 ft, 45.6; other sands gas and distillate. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** Sun Oil Co., 10,000 acres. **Heaving Shale:** Has been found in general area.

LOVELL LAKE*

Centering around Lovell Lake, William Smith Survey. **Means of Discovery:** Sub-surface information. **Extent of Development:** C. H. McSpadden's Burrell 1, abn 7795 ft in Marginulina, June, 1936. **Principal Leaseholder:** C. H. McSpadden.

NEDERLAND

S of Nederland, centering T&NO Sec. 7. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1937. **Extent of Development:** J. T. Miller's Edwards 1, dry at 3700 ft. n of Port Arthur, G. W. McPail's Owens 1, BBB&C Sec. 387, dry 3880 ft, July, 1936. Owens 2, dry at 1718 ft, Sept., 1936. **Principal Leaseholder:** Sun Oil Co.

NOME

Three mi se of Nome, centering W. H. Aldridge, M. Peveto. J. Blair T&NO Sec. 32, and J. W. Kirby Surveys. **Means of Discovery:** Surface indications, torsion balance, Sun Oil Co., 1932. Torsion balance and reflection seismograph, Shell Petroleum Corp., 1934-35. **Discovery Well:** Shell's Carpenter 1, July 19, 1936, 574 bbls 26.9 gr oil daily, ¼-in ch, at 6005 to 6058 ft. **Type Structure:** Regarded as deep-seated salt dome but no domal material has been encountered. **Approximate Elevation:** 40 to 60 ft. **Producing Formations:** Gas sand 4775 ft. Marginulina of Oligocene at 5990 to 6060 ft. **Average Sand Thickness:** 45 ft. **Productive Acres:** 1000; 700 developed. **Daily Production, Juy 1, 1938:** 1,415,000 bbls. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production Through June, 1938:** 901,263 bbls. **Indicated Remaining Reserve:** 9,098,737 bbls. **Deepest Hole:** See remarks. **Casing Programs:** Shell, 10¾-in, 1000 to 1050 ft; 5 or 7-in, 5990 to 6010 ft. Sun, 13 or 16-in, 108 ft; 9-in, 1156 ft; 5, 5¾ or 7-in, 5995 to 6010 ft. **Oil Outlet:** Sun Pipe Line Co., 6-in. **Gravity Oil:** 26.9. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Shell

and Sun. **Remarks:** Before discovery Sun Oil Co.'s Paggi 1 yielded two joints 28 gravity oil but very little gas, from 6003-6023-foot sand on drill stem test, and failed to produce when casing was run and screen set, only giving slight shows of oil after swabbing dry. Hole was then carried to 7277 feet, finding no more shows, and abnd Decmber, 1933. One mile sw of Paggi test, The Texas Co.'s J. R. Bevil 1, Burr & Caswell Survey No. 1, quit at 6402 feet, December, 1933, after encountering slight show of oil at 6182-6194 feet. Sun Oil Co.'s Long 1, John Blair Survey, was spudded in December, 1933, and quit after drilling to 9045 in Vicksburg, April, 1935. Yielded some oil and showed gas pressure as high as 750 pounds on several drill stem tests, 5963 to 6072 ft; also had several small oil shows around 6400 ft. Salt water was swabbed from 6000 ft. The casing pressure was 800 pounds; tubing 1000 pounds. Several settings were made from 8407 to 8697 ft and salt water was swabbed. Later the well was finished as a dry hole. **Heaving Shale:** In Sun's deep test the operators dr 450 ft of heaving shale in Hockleyensis formation under the Long tract. Top of the heave was found around 8595 ft. One well to 20 acres; allowable based on half potential and half acreage.

NORTH CHEEK

North of Cheek and sw of Amelia, centering S. Stivers Survey. **Means of Discovery:** Reflection seismograph and torsion balance, Magnolia Petroleum Co., 1935, 1936. **Discovery Well:** Magnolia's Phelan 1, dr to 8602 ft, pb and set 7-in, 8354 ft, dr plugs to 8460 ft, came in June 14, 1937, 390 bbls 56.2 gr distillate in 22 hours, ¼-in ch. **Type Structure:** Deep seated salt dome. **Approximate Elevation:** 15-30 ft. **Producing Formations:** Frio of Oligocene at 8350 to 8460 ft, 8665-82 ft. **Average Sand Thickness:** 60 ft (Gas and oil). **Productive Acres:** 550; 40 developed. **Daily Production, July 1, 1938:** 76 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 54,101 bbls. **Indicated Remaining Reserve:** 4,945,899 bbls. **Deepest Hole:** Magnolia's Phelan 3-A, dry at 9007 ft, March, 1938. **Casing Programs:** Magnolia, 18⅝-in, 130 ft; 13⅜-in, 7894 ft; 7-in, 8350 ft. **Oil Outlets:** Magnolia Pipe Line Co. **Gravity Oil:** 8350 to 8460 ft, 56.2; 8665-82 ft, 43.5. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** Magnolia, 4500 acres.

NORTH NOME*

N of Nome, centering C. L. Nash, J. Vannes and A. Horton Surveys. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1936 and 1937. **Extent of Development:** Lee Brothers' Wilson, dry 7012 ft, no shows, Nov., 1937. Humble's J. R. Blanch 1, dry 6530 ft, Jan., 1938 (core test). Same operator's Willis 1, J. Vannes sur, dry at 6500 ft, March, 1938. (core test). **Principal Leaseholder:** Humble.

PINE ISLAND*

S of Pine Island, centering J. W. McCaffey HT&B 10 Survey. **Means of Discovery:** Geophysics by Sun Oil Co. The first well was drilled in area because it was believed that the Amelia fault extended in this direction. **Extent of Development:** H. Hebert and S. Smith's Broussard Trust 1, logged several gas sands, 6835 to 6866 ft, abn 7360 ft in salt water sands, July, 1937. **Principal Leaseholders:** Sun Oil Co., S. Smith and H. Hebert, Magnolia Petroleum Co., United Gas Co.

SABINE PASS—Hebert Broussard Ranch*

West of Sabine, centering Herbert & Broussard land in Pedro de la Garza and J. Fletcher Surveys. **Means of Discovery:** Reflection seismograph, torsion balance, Humble Oil & Refining Co., Magnolia Petroleum Co., Republic Production Co., 1936, 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** Humble, Magnolia, Republic.

SPINDLE TOP

Two mi s Beaumont; Jno. A. Veatch, P. Humphrey, J. Douthit Surveys. **Means of Discovery:** Elevation, gas, mineral waters. **Discovery Well:** J. F. Lucas' Gladys 1, 84,000 bbls, 1139 ft, Jan. 19,1901. **Structure:** Salt dome, top cap rock 700 ft, salt 1200 ft. **Producing Formations:** Cap rock and Miocene sands 800-1200 ft; Miocene 2500-3500 ft; Middle Oligocene and Frio, 4000-5879 ft. **Approximate Elevation:** 5-25 ft. **Average Sand Thickness:** 100 ft. **Productive Acres:** 425. **Daily Production, July 1, 1938:** 2030 bbls. **Estimated Ultimate Recovery:** 140,000,000 bbls. **Production Through June, 1938:** 124,308,963 bbls. **Indicated Remaining Reserve:** 5,691,037 bbls. **Deepest Hole:** Yount-Lee Oil Co.'s Gladys City 6, dry at 6765 ft, in Vicksburg. **Casing Programs:** Stanolind Oil & Gas Co., 10-in, 360 to 975 ft; 6⅝ or 7-in, 2500 to 5879 ft. Unity Oil Co., 10-in, 400 ft; 7-in, 2580 ft. **Oil Outlets:** Stanolind Pipe Line Co., 6-in; Humble Pipe Line Co., 8-in; Texas Pipe Line Co., 12-in; Atlantic Pipe Line Co., 10-in; Gulf Pipe Line Co., 10-in; Sun Pipe Line Co., 8-in. **Range of Gravity:** 26-29. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Stanolind Oil & Gas Co., Gulf Oil Corp., Magnolia Petroleum Co., Rio Bravo Oil Co., The Texas Co., Sun Oil Co. **Remarks:** First oil discovery in Gulf Coast. **Heaving Shale:** Is found under Gladys City tract around 5900 ft.

TOLIVER*

South of Pine Island Bayou, centering around S. Morris Survey. **Means of Discovery:** Old surface prospect; gas in bayou; torsion balance, Earl Hankamer, 1934. **Extent of Development:** Turnbull & Irwin's Toliver 1, dry at 5573 ft, August, 1934. Navarro Oil Co.'s Toliver 1, dry at 4840 ft, 1934. K. Keith's Hankamer 1 quit at 5029 ft, May, 1930.

WEST BEAUMONT

North of Amelia field and west of Beaumont, centering H. Williams and H. Houston Surveys. **Means of Discovery:** Worked with geophysics some time ago. The block was turned to Stanolind Oil & Gas Co. when Yount-Lee Oil Co. was purchased by Stanolind. Stanolind Oil & Gas Co. worked in the area and so did Glenn H. McCarthy. **Discovery Well:** McCarthy's Longe 1, 4,000,000 cu ft gas and 40 bbls 58 gravity distillate daily, 6099 to 6113 ft, March 20, 1936. **Type Structure:** Faulted dome. **Approximate Elevation:** 30-50 ft. **Producing Formations:** Miocene sands 4560 to 4600 ft; Oligocene sands 5300 to 5400 ft; 5595 to 5640 ft; 5835 to 5895 ft; 5901 to 5911 ft; 6095 to 6109 ft; 6740 to 6756 ft. **Average Sand Thickness:** 10-25 ft. **Productive Acres:** 500; 300 developed. **Daily Production, July 1, 1938:** 1410 bbls. **Estimated Ultimate Recovery:** 4,000,000 bbls. **Production Through June, 1938:** 603,653 bbls. **Indicated Remaining Reserve:** 3,396,347 bbls. **Deepest Hole:** The Texas Co.'s Yount 1, sw of discovery, tried to blow out in gas sands 8041 to 8044 ft, stuck drill pipe at 8501 ft, abn in Vicksburg 8501 ft, Nov., 1936. **Casing Programs:** Glenn H. McCarthy, 10-in, 1100 to 1200 ft; 7-in, 4500 to 7000 ft. Stanolind, 16-in, 60 ft; 10-in, 1600 ft; 7-in down to 6779 ft. **Oil Outlets:** Sun Pipe Line Co., 4-in. **Gravity Oil:** 27 to 29. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Stanolind, Glenn H. McCarthy, Sun Oil Co., The Texas Co. **Remarks:** After Humble discovered Amelia field Glenn H. McCarthy drilled Longe 1 on farm-out acreage of Stanolind Oil & Gas Co. The discovery well logged several oil sands. Later development between West Beaumont and Amelia showed that the two areas were separated by a graben.

WEST HAMPSHIRE*

Centering around T. & N. O. Section 70, Jefferson County, and J. M. Duran Survey, Chambers County. **Means of Discovery:** Torsion balance, Glenn H. McCarthy, Inc., 1935. **Extent of Development:** Glenn H. McCarthy's Howth 1, T. & N. O. Section 70, quit at 8015 ft in Frio, January 20, 1936; showings of oil and gas. **Principal Leaseholders:** Glenn H. McCarthy, Inc., Sun Oil Co., Gulf Oil Corp. **Remarks:** Closely ties in with Winnie, which see.

WHITE RANCH*

Southeast of Seabreeze and ne of High Island, centering around the White ranch, J. T. White and Gregg Surveys. **Means of Discovery:** Reflection seismograph, Sun Oil Co., Magnolia Petroleum Co., 1934. **Extent of Development:** Magnolia Petroleum Co.'s Hebert Trust 1, abnd 9708 ft, 1934; show gas 9405 to 9407 ft. **Principal Leaseholders:** Glenn H. McCarthy, Inc., Sun Oil Co., Refining Co., Sun Oil Co. Sun had 35,000 acres and drilled Hamilton 1, (See Seabreeze).

LIBERTY COUNTY

CLEVELAND

Four mi se Cleveland, John Pleasants, C. Smith, T. Devers Surveys. **Means of Discovery:** Surface indications; Humble Oil & Refining Co., said to have found encouragement with torsion balance in 1931; Gulf Production Co., also did geophysical work with pendulum and refraction resulting in acquisition of large lease block. **Discovery Well:** Gulf Production Co.'s Kirby Lumber Co. 1, nw corner John Pleasants Survey, 50 barrels 41 gravity oil per hour through a three-eighths-inch choke, from upper Cockfield sand, 5716-5724 ft, December 29, 1933. **Structure:** Regarded as similar to other Conroe trend structures, such as Conroe, Tomball, Raccoon Bend, Livingston; that is, deep seated dome, possibly over salt mass. **Producing Formations:** Upper Cockfield sands at 5672-75 ft; 5716-5724 ft; 5820-5887 ft, and several wells had showings of oil and gas from 5500-5700 ft. Wilcox 9090-9100 ft. **Approximate Elevation:** 125-145 ft. **Average Sand Thickness:** 8 ft. **Productive Acres:** 600; 450 developed. **Daily Production, July 1, 1938:** 346 bbls. **Estimated Ultimate Recovery:** 2,500,000 bbls. **Production Through June, 1938:** 996,102 bbls. **Indicated Remaining Reserve:** 1,503,898 bbls. **Deepest Hole:** Gulf's Kirby C-21, drilled into Wilcox formation, stopped at 10,075 ft, pb and comp 9100 ft, opening a new sand for field, June, 1938. **Casing Programs:** Gulf, 10-, or 10¾-in, 1000 ft; 7-in, 5700 to 5865 ft. **Oil Outlets:** Gulf Refining Co., 3-in; Magnolia Pipe Line Co., 3- and 8-in. **Range of Gravity:** 40. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Gulf Oil Corp. has 14,000 acre block, almost solid, which will probably embrace large proportion of productive area; Black Gold Corp. **Remarks:** Wells are spaced 933 ft apart and 466 ft from the lease line. Gas/oil ratio 1500 to 1. Third field in Gulf Coast to produce from Wilcox formation.

DAVIS HILL†

Sixteen mi n Liberty, Santos Coy and J. D. Martinez Nos. 6 and 9 surveys. **Means of Discovery:** Elevation, gas, broken surface. **Structure:** Salt dome; top of cap rock 800 ft, salt 1200 ft. **Deepest Hole:** The Texas Co.'s Havard 1, 5160 ft. **Principal Leaseholder:** The Texas Co. **Remarks:** Only production has been that found in non-commercial quantities around 1000 ft. H. C. Cockburn et al acquired around 1000 acres on the nw flank of dome. The area was worked with reflection and torsion balance.

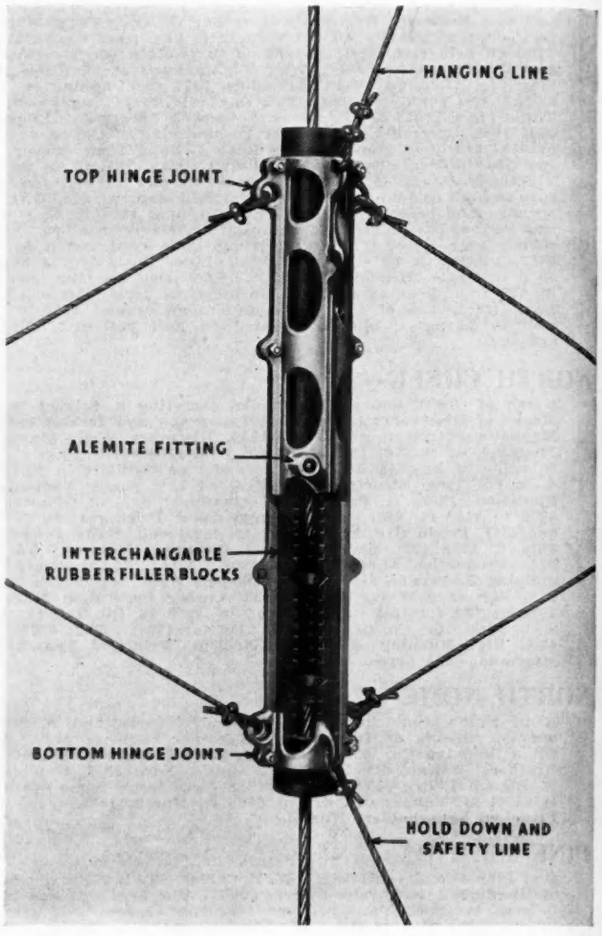
DEVERS*

M. Whittington and H.T. & B. No. 10 surveys 1½ mi n Devers. **Means of Discovery:** Torsion balance, Humble Oil & Refining Co., 1929. **Extent of Development:** Humble's Sabine Train 1, Whittington Survey, abnd 5801 ft in 1930; no shows reported. Diadem Oil Corp.'s Pickett 1, H.T. & B., No. 10, salt water sand 5170, 5671-6613 ft, dry 7506 ft, Feb., 1937. Humble's Sabine Tram 2, topped Cook Mountain 8775 ft, dry at 9515 ft, Nov., 1937; Moore 2, salt water sands 6500 ft, dry at 6500 ft, Dec., 1937. This was considered a core test. **Principal Leaseholders:** Humble, Woodley Petroleum Co., The Texas Co.

ESPERSON

Six mi sw Dayton, C. W. Fisher, D. L. Kokernot, M. Duncan, O. G. Gigstradt, A. M. Damron and C. C. Brunson surveys. **Means of Discovery:** Torsion balance, Union Exploration Co., 1928. **Discovery Well:** Harvey S. Smith's Moores Bluff Corp. 1, 800 bbls, 3304-3320 ft, Aug. 15, 1929. **Structure:** Salt dome, top salt 7055 ft. (See deepest hole.) **Producing Formations:** Miocene sands 2275-2398, 2730-2996, 3235-3350 and 3573 ft; sands 3950-4460 ft; Jackson sands 5707-5752 ft, 5860-5872 ft, 6707-7077 ft; Upper Saline Bayou sands 7346-7624 ft. **Average Sand Thickness:** 15 ft. **Pro-**

*Prospect. †Salt dome, no production. ‡Gas field.



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In modern drilling practice Patterson-Ballagh Protectors have passed from the classification of "optional" into that of "necessary." Not only do they save wear on casing and equipment but they minimize drill pipe friction. Because they eliminate Kelly joint whip and reduce rotational vibration, faster drilling speeds and straighter holes are possible. Patterson-Ballagh Protectors are dated to assure fresh, tough, long-wearing rubber. New stocks of these protectors are available in all leading drilling fields.

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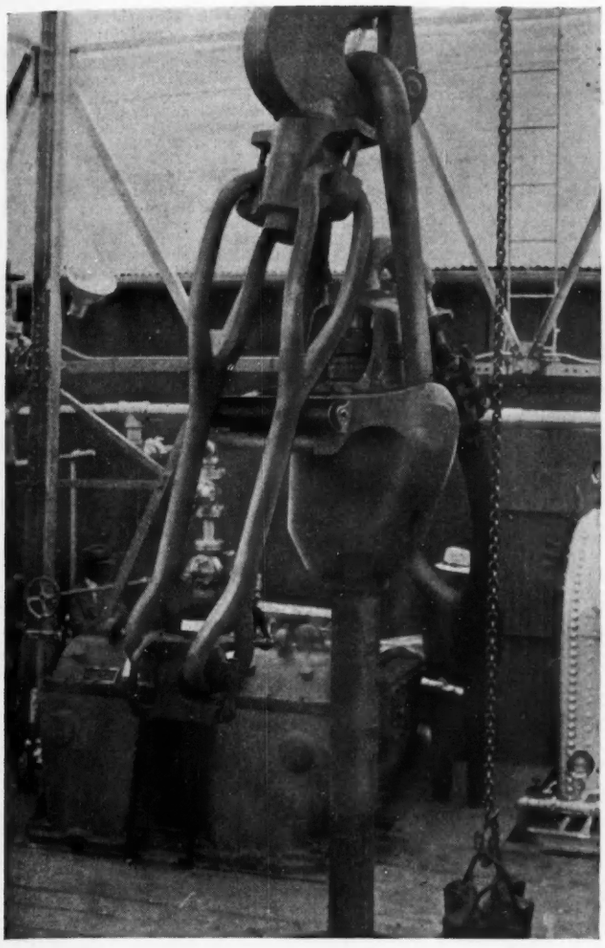
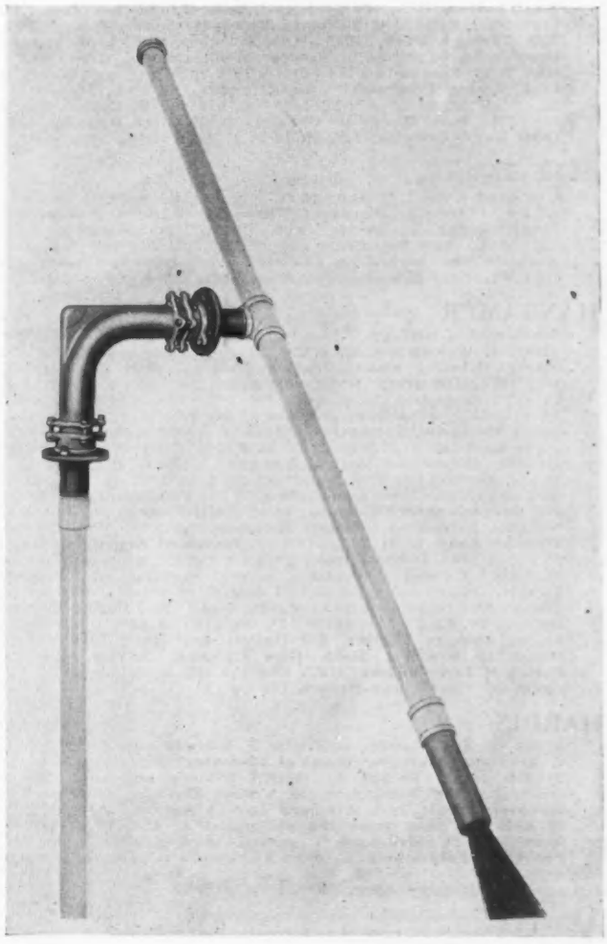


You need a Swivel Bumper

"Why didn't someone think of it before?" —is the way users attest the value of the Patterson-Ballagh Swivel Bumper. Inexpensive and easy to install, the Swivel Bumper offers protection to both elevator bails and swivels. The cutting of elevator links, flanges and bails through contact with the swivel is eliminated. When the Swivel Bumper is used, the links stay centered on the hook. The same high quality, long wearing rubber used in Patterson-Ballagh Protectors goes into the Swivel Bumper.



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LAGH PROTECTION

ductive Acres: 500; 450 developed. **Daily Production, July 1, 1938:** 1197 bbls. **Estimated Ultimate Recovery:** 9,000,000 bbls. **Production Through June, 1938:** 5,036,353 bbls. **Indicated Remaining Reserve:** 3,963,647 bbls. **Deepest Hole:** General Crude Oil Co.'s Kay 1, M. Duncan Survey, dr to 9375 ft in salt and abnd, June, 1935. **Casing Programs:** General Crude Oil Co., 12½- or 13-in, 62 to 735 ft; 9- or 9⅝-in, 2200 to 7624 ft. **Oil Outlet:** Sun Pipe Line Co., 6-in. **Range of Gravity:** 21-32. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** General Crude Oil Co.

FELECIA*

Centering around R. Burrell, T. & N. O. Sections 12 and 13, 3½ mi se of Devers. **Means of Discovery:** Reflection seismograph, Stanolind Oil & Gas Co., Feb., 1935; Humble Oil & Refining Co., 1934. Shell Petroleum Corp., Sun Oil Co., Independent Exploration Co. worked in the area with reflection seismograph, 1935. **Principal Leaseholders:** Shell, Humble, Stanolind, Gulf, Sun.

HANKAMER

Seven and a half mi s Devers, Levi Barrow, Geo. Strangler, A. Allen, A. Weaver and H. & T.C. 21 and 22 surveys. **Means of Discovery:** Mineral waters, Torsion balance, Gulf Production Co., 1926-1928. **Discovery Well:** Gulf's Boyt 1, second test of area, H. & T.C. section 22, flowed 700 bbls 20 gravity oil, 2674 ft, June 6, 1929. **Structure:** Salt dome, top salt 7582 ft. (See deepest hole.) **Producing Formations:** Miocene sands around 2561-2698 ft; other sands around 2900, 3600, 3800, 3950 to 4400, 4550, 4800 and 4900 ft. (Numerous lenticular sands, different gravities of oil.) Lower Marginulina-Frio sands at 5071 to 5162 ft. Several wells had showings of oil from 5670-5709 ft. **Productive Acres:** About 375. **Average Sand Thickness:** 29 ft. **Daily Production, July 1, 1938:** 947 bbls. **Estimated Ultimate Recovery:** 7,500,000 bbls. **Production Through June, 1938:** 5,121,847 bbls. **Indicated Remaining Reserve:** 2,378,153 bbls. **Deepest Hole:** Gulf's Bingle 1, se flank, tested oil 4616-4660 ft, and encountered several showings of oil down to 7681 ft, topped salt and drilled four ft of this formation; pb to 5150 ft and completed as producer, Sept., 1935. **Casing Programs:** Gulf, 20-in, 61 ft; 10¾-in to 13⅜-in, 1100 to 1200 ft; 6⅝-, 7-, or 9⅝-in, 2200 to 5700 ft. **Oil Outlet:** Gulf Pipe Line Co., 8-in. **Range of Gravity:** 15-32. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Gulf, Sterling Oil & Refining Co., Cretaceous Oil Co., Wilson-Broach Oil Co.

HARDIN

Three mi n of Hardin, centering J. Robeson and H. B. Johnston, A. B. Hardin surveys. **Means of Discovery:** Surface geology, Jack Frazier later checked by torsion balance and reflection seismograph; Gulf Production Co. worked the area with pendulum. **Discovery Well:** Jack Frazier's Lynott Buffon 2, July 23, 1935, 25 bbls per hour from csg perforated at 7663-73 ft, after pb from 7851 ft. **Structure:** Regarded as deep seated salt dome. **Producing Formations:** Epondiz Yeguaensis (Upper Saline Bayou), from 7567-95 to 7600-73 ft. **Approximate Elevation:** 40-60 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 1200; 400 developed. **Daily Production, July 1, 1938:** 4,715 bbls. **Estimated Ultimate Recovery:** 8,500,000 bbls. **Production Through June, 1938:** 1,052,356 bbls. **Indicated Remaining Reserve:** 7,447,644 bbls. **Deepest Hole:** North of the discovery well, Atlantic Refining Co. and Brace's Hardy 1, salt water 7500 ft, 7700 ft, and 8000 ft, dry 8110 ft, May, 1936. **Casing Programs:** Humble Oil & Refining Co., 13-in, 136 ft; 9-in, 1843 ft; 7-in, 7563 ft. Gulf Oil Corp., 13-in, 57 ft; 10-in, 1791 ft; 7-in, 7601 ft. **Oil Outlets:** Magnolia Pipe Line Co., 4-in; Atlantic Pipe Line Co., 10-in. **Range of Gravity:** 37-51. **Rigs Running, July 1, 1938:** 12. **Principal Leaseholders:** Jack Frazier, Humble Oil & Refining Co., Gulf Oil Corp., Atlantic Oil Producing Co., Amerada Petroleum Corp., Magnolia Petroleum Co., Shell Petroleum Corp., Sun Oil Co., Crown Central Oil Co., Bishop Oil Co., Fohs Oil Co., L. W. Wicks, Mills Bennett Production Co., Turnbull & Irwin, Tide Water Oil Co., The Texas Co., Stanolind Oil & Gas Co., Skelly Oil Co., Woodley Pet. Co., Pan American Prod. Co., Strake Oil Corp.

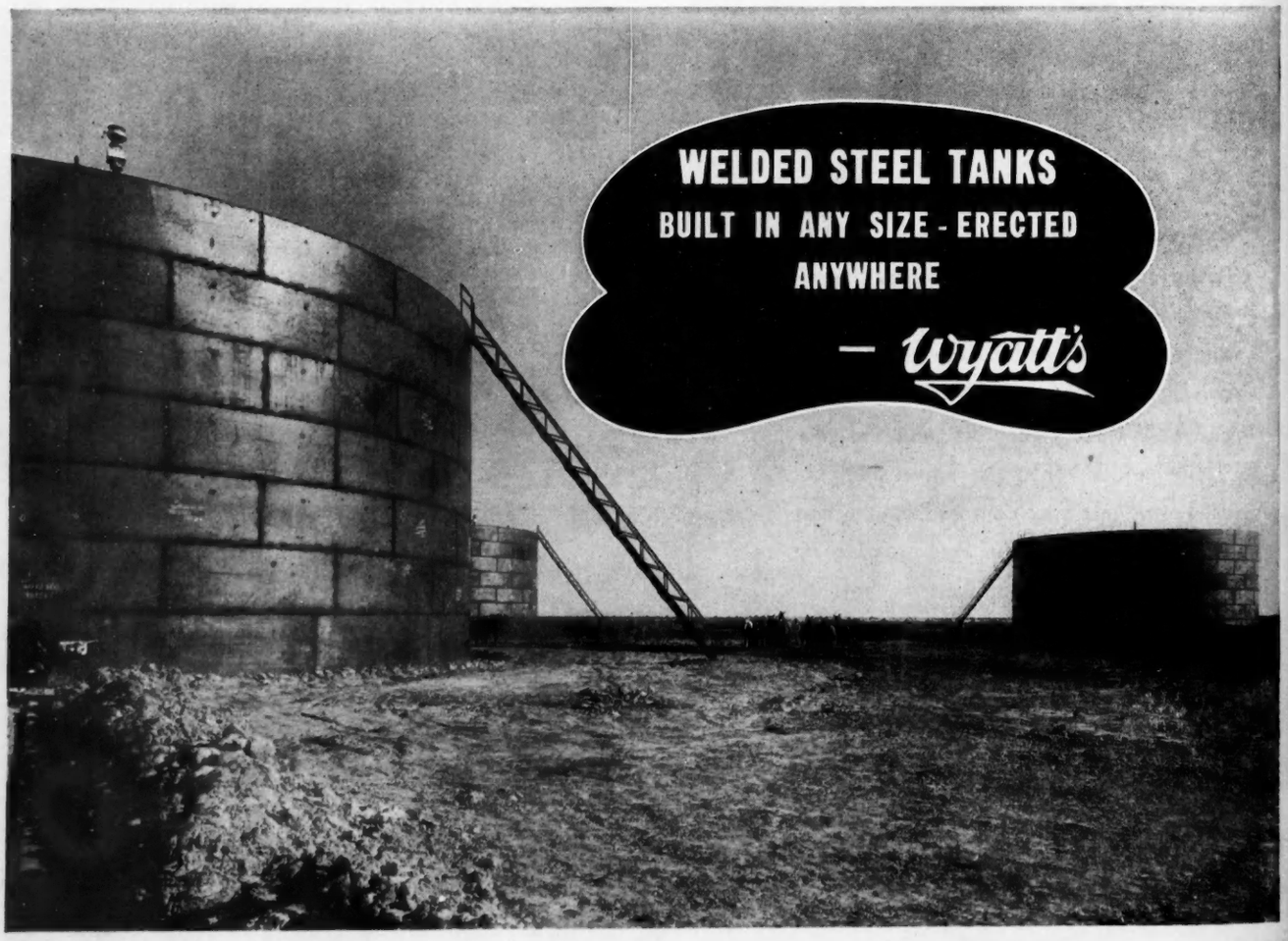
HEISKELL*

Nine mi s Liberty; Joseph Dugat, Theodore Dorsett surveys. **Means of Discovery:** Torsion balance, Rycade Oil Corp., 1930; also later used seismograph. Reflection seismograph, Humble Oil & Refining Co., 1935-1936. **Extent of Development:** Rycade's Heiskell 1, Dugat Survey, abnd 5930 ft in hard sand late in 1930; no shows reported, but company continued holding leases. **Remarks:** Pure Oil Co. is reported to have leased in the area. Humble Oil & Refining Co. took geophysical option on 10,000 acres along with commercial leases on 6000 acres, Nov., 1935.

HULL

At Hull, Jesse Devore, S. Wickliff, I & G. N. 27 and 28, and Chas. Underton surveys. **Means of Discovery:** Elevation, gas. **Discovery Well:** Republic Production Co.'s Fee 3, July 26, 1918, 1000 bbls, 1200 ft. **Structure:** Piercement type salt dome, top cap rock 350 ft, salt 700 ft. **Producing Formations:** Several wells pumping oil below the top of the cap rock at 400-450 ft, 578 and 850 ft. Miocene, Oligocene, Jackson and Claiborne sands at 1400 to 5500 ft and 5705 to 5806 ft. Sands discovered in 1933 at 4000 to 5228 ft identified as Jackson and Yegua. **Approximate Elevation:** 25-45 ft. **Average Sand Thickness:** 63 ft. **Productive Acres:** 750; 700 developed. **Daily Production, July 1, 1938:** 7160 bbls. **Estimated Ultimate Recovery:** 100,000,000 bbls. **Production Through June, 1938:** 86,008,901 bbls. **Indicated Remaining Reserve:** 13,991,099 bbls. **Deepest Hole:** Empire Oil & Gas Co.'s Barngrover 20, dry at 6846 ft, April, 1936, in Cook Mountain. **Casing Programs:** The Texas Co., 10-in, 564 ft; 7-in, 4700 to 5187 ft. Houston Oil Co., 10-in, 536 ft; 7-in, 4900 to 5200 ft. Gulf Oil Corp., 10-in, 1171 ft; 7-in, 4972 ft. Sun Oil Co., 10-in, 617 ft; 7-in, 4450 ft. **Oil Outlets:** Humble Pipe Line Co., 6-in; American Pipe Line Co., 6-in; Sun Pipe Line Co., 4-in; Gulf Pipe Line Co., 6-in. **Range of Gravity:** 17-45. 850 ft, 37; 3350 ft, 21; 4550 ft, 25; 4700 to 5200 ft, 39. **Rigs Running, July 1, 1938:**

*Prospect. †Salt dome, no production. ‡Gas field.



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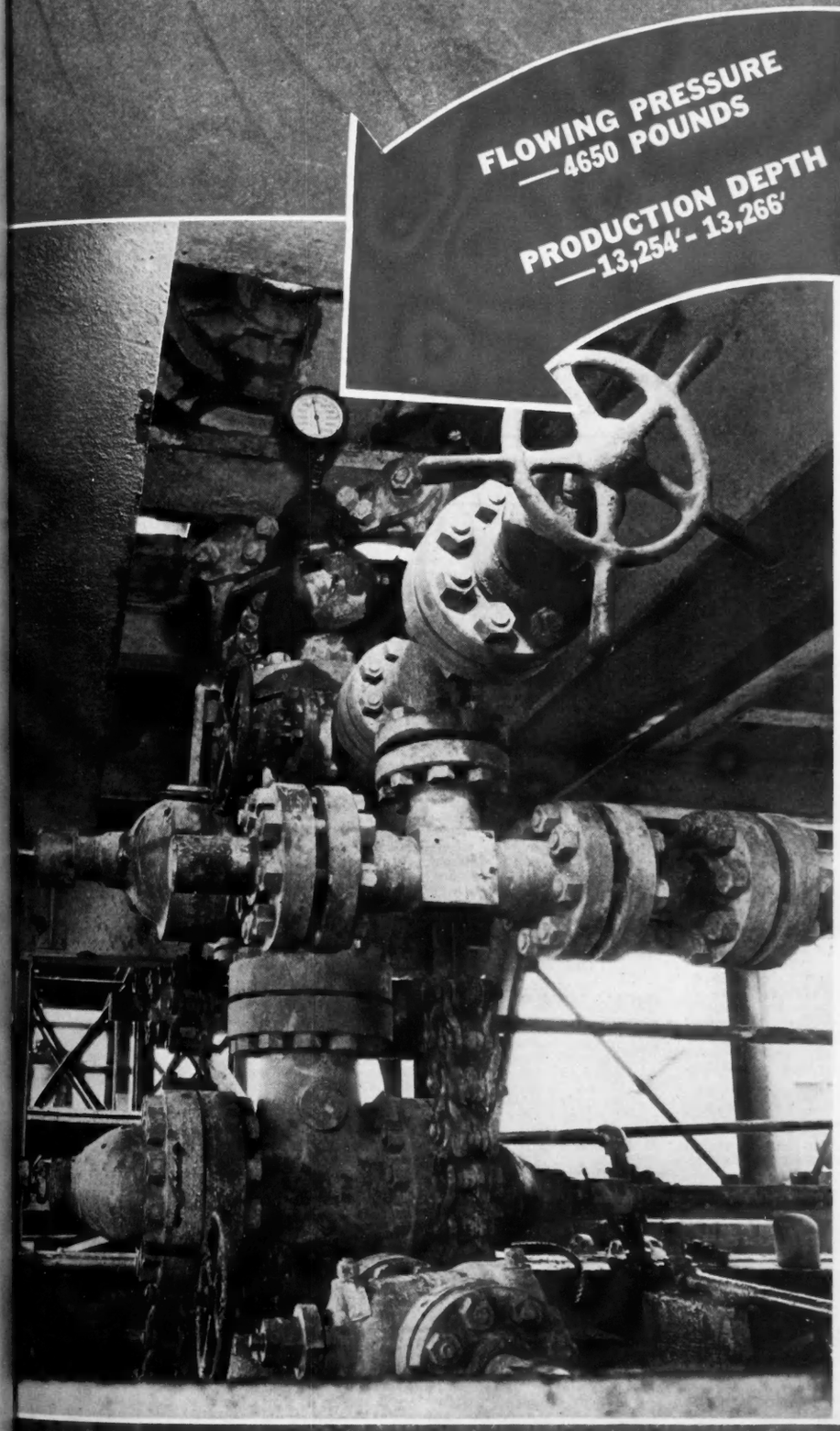

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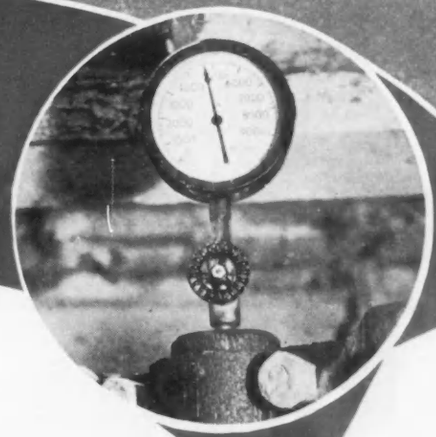
PRODUCTION DEPTH —13,254' - 13,266'



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Two. **Principal Leaseholders:** Gulf Oil Corp., Republic Production Co., The Texas Co., Magnolia Petroleum Co., Empire Gas & Fuel Co., Phoenix Development Co., Mecom Oil Co., Houston Production Co., Humble Oil & Refining Co., Eclipse Oil Co., Miramar Corp., Sun Oil Co., Stanolind Oil & Gas Co., Hamil and Smith. **Heaving Shale:** Is found under Phoenix, Miramar, Baldwin, Hannah, Dolbear, Taylor tracts. From 100 to 800 feet of heaving shale has been found in the Jackson and Claiborne formations. Top of heave is encountered around 4037 ft, 5380 ft, 5758 ft, 6740 ft. Houston Oil Co. completed a well at 4800 ft after drilling 700 ft of heaving shale.

KENEFLICK*

Two mi e Kenefick station, centering in Reason Green Survey. **Means of Discovery:** Gas seeps, geophysics, 1933. **Extent of Development:** C. S. Thomas and associates' A. H. Eicke 1 showed salt water and was abnd 5334 ft, Oct., 1934.

KENO-EXCELSOR*

Northeast of Cleveland, centering w of H. & T. C. Section 105, in H. & T. C. Section 103, Wm. West, San Jacinto County. **Means of Discovery:** Surface and subsurface geology; geophysics. **Extent of Development:** A. L. Maxwell's Hincliff 1, H. & T. C. Section 105, quit at 5574 ft, 1935. Reported oil sands from 5434 to 5457 ft. Salt water sand was found at 5556 ft and abnd Sept., 1936. Peveto & Mayo's Palmer 1, J. S. Fenner Survey, abnd 6002 ft, salt water sand in Cockfield. Sept., 1935. The above two wells with several surrounding dry holes in San Jacinto County showed the existence of a high in the area and influenced geophysical campaign. Cockburn Oil & Temple Hargrave's Cruse 1, dry at 5450 ft. Feb., 1936, salt water sands found in Cockfield. Cockburn et al's Whitten Estate 1, Wm. West Survey, top Cockfield 5181 ft gas odor 5271-72 ft, abnd 5610 ft, July, 1937. O. C. Carrey's Weaver 1, nw Cleveland, J. Devers Survey, top Cockfield 5651 ft, salt water sand 5871 ft, abnd 5985 ft, Sept., 1937.

MARTHA*

Northwest of Liberty, centering the town of Martha, around the G. C. & S. F. Section 789 I. & G. N. Nos. 7 and 8, and B. Pruitt Survey. **Means of Discovery:** Reflection seismograph, 1935 and 1936, Stanolind Oil & Gas Co. and Continental Oil Co. **Principal Leaseholders:** Stanolind Oil & Gas Co., Continental Oil Co., Sun Oil Co., Kirby Petroleum Co., Pan American Production Co. **Remarks:** Due to high rentals which were paid in this area it is generally believed that the block will be drilled in the future.

MOSS BLUFF

Ten mi se Liberty. B. M. Spinks, R. O. W. McManus, Jean Barry, N. D. Labadie and James McFaddin surveys. **Means of Discovery:** Seismograph. Gulf Production Co., 1926. **Discovery Well:** Humble Oil & Refining Co.'s Sterling 6, Dec. 30, 1929, 800 bbls 32 gravity oil from sand at 5500-5666 ft. **Structure:** Salt dome, top cap rock 650 ft, salt 1170 ft. **Producing Formations:** Sand above cap rock 781-787 ft; Middle Oligocene sands 5500-5860 ft. **Productive Area:** About 20 acres. **Deepest Hole:** Gulf's McFaddin A-4, se flank, abnd when drill pipe was stuck in sticky shale at 7375 ft in 1932. **Production Through 1937:** 180,000 bbls. **Daily Production in 1938:** None. **Oil Outlet:** Humble Pipe Line Co., 6-in. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Gulf Oil Corp., Humble Oil & Refining Co., Pure Oil Co., Shell Petroleum Corp. **Remarks: Heaving Shale:** Is found under McFaddin. Breeden, and Harf tracts in Vicksburg formation around 6600 ft.

NORTH DAYTON

Seven mi nw Dayton. H. & T. C. Sections 118, 119, 120, 124, 125 and 135. **Means of Discovery:** Elevation, gas, indications. **Discovery Well:** Paraffin Oil Co.'s Fee 3, Sept., 1905, 5000 bbls, 800 ft. **Structure:** Salt dome, top cap rock 600 ft, salt 800 ft. **Producing Formations:** Cap rock and Miocene sands at 400 to 1100 ft; Oligocene sands at 4075 to 5188 ft. **Average Sand Thickness:** 32 ft. **Productive Acres:** 75. **Daily Production, July 1, 1938:** 97 bbls. **Estimated Ultimate Recovery:** 2,500,000 bbls. **Production Through June, 1938:** 2,315,544 bbls. **Indicated Remaining Reserve:** 184,456 bbls. **Deepest Hole:** Harvey S. Smith et al's Kynerd 1, west flank, Section 31, dry at 5700 ft, Dec., 1930 in Yegua. **Casing Programs:** The Texas Co., 10-in, 1100 ft; 6⅝-in, 4950 ft. Harrison & Abercrombie, 10- or 12-in, 1050 to 1450 ft; 6⅝- or 7-in, 4100 to 4734 ft. **Oil Outlet:** Sun Pipe Line Co., 4-in. **Range of Gravity:** 22-33. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** D. J. Harrison, Gulf Oil Corp., Humble Oil & Refining Co., The Texas Co., Sun Oil Co. **Remarks: Heaving Shale:** Is found under the Balderack tract in Oligocene formation.

RAYWOOD*

Between South Liberty and Hull centering J. Martin and Wm. Phelps surveys. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1936 and 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Sun Oil Co.

RUMAYOR*

One mi se of Rumayor, centering A. and J. Cherry, J. F. De Rumayor surveys. **Means of Discovery:** Torsion balance, Atlantic Oil Producing Co., Magnolia Petroleum Co., Shell Petroleum Corp. and Continental Oil Co., 1933-34. Reflection seismograph, Amerada Petroleum Corp., Magnolia Petroleum Co., and The Texas Co., 1933-34. **Extent of Development:** Magnolia Petroleum Co.'s Maco Stewart 1, dry at 5890 ft, Oct., 1934; cored salt water sand in Cockfield, 5588 to 5591 ft. In San Jacinto County in J. F. De Rumayor Survey, Cockburn Oil Co.'s K. Moore 1 cored salt water in Cockfield, abnd 5053 ft, Feb., 1936. J. C. Mayo's K. Moore 1, salt water sands 5990 to 6020 ft in Yegua, abnd Oct., 1936. Same operator's Dunman 1, quit in salt water sands at 6190 ft in Discorbis Yegua, Dec., 1936. Same operator's Gibbs Brothers 1, dry 6020 ft, Sept., 1937. **Principal Leaseholders:** Shell Petroleum Corp., Sun Oil Co.

*Prospect. †Salt dome, no production. ‡Gas field.

SOUTH LIBERTY

Three mi s Liberty. M. G. White, D. Minchey, Wm. Duncan, Eliz. Munson surveys. **Means of Discovery:** Sulphur springs, gas escapes, oil seeps. **Discovery Well:** South Liberty Oil Co.'s Pickett 2. 25 bbls, 3206 ft, Jan., 1925. **Structure:** Salt dome, top cap rock 350 ft, salt 500 ft. **Producing Formations:** Cap rock, Oligocene, Jackson and Yegua sands; around 700 to 1292 ft; 2000 to 3900 ft, and from 4743 to 4996 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 230. **Daily Production, July 1, 1938:** 528 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production Through June, 1938:** 15,391,345 bbls. **Indicated Remaining Reserve:** 4,608,655 bbls. **Deepest Hole:** Humble Oil & Refining Co.'s Welder 10, w flank test, 4996 ft, Oct., 1934, discovered a new producing sand for the field. **Casing Programs:** Humble Oil & Refining Co., 10-in, 1209 ft; 7-in, 4726 ft. Texas Co., 6⅝-in, from 3100 to 3400 ft. **Oil Outlets:** Gulf Pipe Line Co., 8-in; Sun Pipe Line Co., 10-in; Humble Pipe Line Co., 8-in. **Range of Gravity:** 21-47. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Navarro Oil Co., Sun Oil Co., Bashara Oil Co., The Texas Co., Humble Oil & Refining Co., Gulf Oil Corp., Empire Gas & Fuel Co., Magnolia Petroleum Co., Fort Bend Oil Co., Stanolind Oil & Gas Co. **Remarks: Heaving Shale:** Is found under Duessen, and Welder tracts in Cockfield formation. Top of heave is found around 4026 ft.

SOUTHEAST CLEVELAND*

Two mi southeast of Cleveland field centering M. Smith and R. J. Faulk Survey. **Means of Discovery:** Reflection seismograph and gravitometer, Gulf Oil Corp., 1937. **Principal Leaseholder:** Gulf Oil Corp.

WEST HARDIN*

West of Hardin field, centering around the F. Hardin, S. Strong, J. Hanney, Wm. Everett and Swail surveys. **Means of Discovery:** Jack Frazier's Lynott Buffam 1, dry at 7511 ft, influenced buying across the Trinity river from the Hardin field. Reflection seismograph, Texas Co., 1935. **Principal Leaseholders:** Sun Oil Co., The Texas Co. **Extent of Development:** Texas Co.'s Page 1, J. Hanney Survey, dr shale 2500 ft, July, 1938.

MATAGORDA COUNTY

ASHWOOD*

Near town of Ashwood, centering around D. Rawls Survey. **Extent of Development:** Mayo, Smith and McDanniel's Calhoun 1, top salt water sand 7480 ft, quit at 8006 ft in Frio, Feb., 1937. **Principal Leaseholders:** Skelly Oil Co., Humble Oil & Refining Co. and Sun Oil Co. **Remarks:** Regarded as the e portion of the Van Vleck high.

BAER RANCH*

Southwest of Sargent, S. Holt Survey. **Means of Discovery:** Geophysics, Sterling Oil & Refining Co., 1935 and 1936. **Extent of Development:** Sterling Oil & Refining Co.'s Baer 1, dry at 6930 ft, Aug., 1936. **Principal Leaseholder:** Sterling Oil & Refining Co.

BIG HILL—Sulphur Field

One one-half mi e of Matagorda, Ira Ingram, Wm. Simpson surveys. **Means of Discovery:** Elevation, gas, sulphur water. **Discovery Well:** Wm. Cash and W. T. Goode's Mayes Synd. 1, 1904, 100 bbls, 840 ft. **Structure:** Salt dome, top of cap rock 825 ft, salt 1100 ft. **Producing Formations:** Oil was from cap rock, as is sulphur. **Productive Area:** Only a few acres as regards oil. **Deepest Hole:** About 3705 ft. **Production Through 1937:** 217,000 bbls. **Daily Production, July 1, 1938:** None. Sulphur still produced, but no oil. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** Texas Gulf Sulphur Co. **Remarks:** Referred to as Gulf. **Heaving Shale:** Is found under John Williams tract around 3271 ft. One well dr about 245 ft of heaving shale.

BLESSING*

Five mi e and s of Blessing, centering around J. Holmes, J. W. E. Wallace and J. Updike surveys. **Means of Discovery:** Gem Oil Co. and Humble Oil & Refining Co. worked the area with geophysical instruments. **Extent of Development:** Tetts & Harris' Pierce 1, salt water sand 4008 to 4025 ft, 6950 to 6953 ft, 7705 to 7723 ft, abnd 7723 ft, Dec., 1936. J. K. Dorvance's Adamick 1, I. & G. N. Blk 7, dry at 8525 ft, June, 1938. **Principal Leaseholder:** Humble Oil & Refining Co. **Remarks:** Gem Oil Co. turned its 5000-acre block to Humble. The Texas Co. took a 4500-acre block s of Blessing after working with reflection seismograph.

BUCKEYE

In and around Buckeye. East portions J. C. Keller and C. Cotton surveys. **Means of Discovery:** Surface geology. **Discovery Well:** United North and South Development Co.'s Stoddard 1, Buckeye townsite, Lot 53, completed Sept. 13, 1932, flowing 1850 bbls 38.7 gravity oil daily through three-eighths-inch choke from sand at 7808-7926 ft. **Structure:** Regarded as very deep seated salt dome, although no dome material encountered. **Producing Formations:** Sand in Lower Marginulina Frio zone (basal Middle Oligocene) at 7750 to 7926 ft. **Average Sand Thickness:** 60 ft. **Productive Acres:** 100; 70 developed. **Daily Production, July 1, 1938:** 152 bbls. **Estimated Ultimate Recovery:** 2,500,000 bbls. **Production Through June, 1938:** 700,279 bbls. **Indicated Remaining Reserve:** 1,799,721 bbls. **Deepest Hole:** United North & South Development Co.'s Stoddard 2, Unit 6, went to 9457 ft, May, 1934; sidetracked at 5600 ft, dr to 7902 ft, abnd July, 1934. **Casing Programs:** United North & South Development Co., 13⅜-in, 1400 to 2392 ft; 7-in, 7755 ft. **Oil Outlet:** Tank cars. **Range of Gravity:** 38.7. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:**

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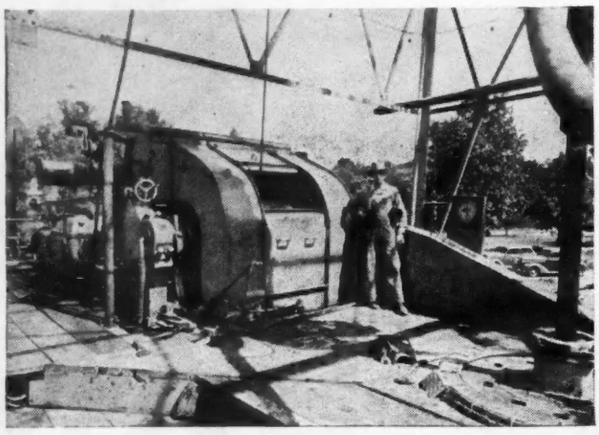

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San Antonio, Texas

United North & South Development Co. **Remarks:** See Wilson Creek.

CITRUS GROVE*

Four mi nw Matagorda, C. Franz, J. J. Criswell surveys. **Means of Discovery:** Torsion balance, North American Exploration Co., for Cockburn Oil Corp., 1930; and also checked by Shell Petroleum Corp., seismograph. Gave good torsion balance picture. **Extent of Development:** Empire Gas & Fuel Co.'s Boker 1, Lot 14, had dry gas blowout at 6248-6250 ft, Nov., 1930, while drilling, tested salt water at 6295 ft, cemented back to 5500 ft, and redrilled to 6460 ft. Harvey S. Smith's Boker 1, Lot 15, Robbins & Middle Subdivision, 1500 ft nw Empire test, had small gas shows around 3900 ft; abnd Jan., 1932, 6375 ft. Continental Oil Co.'s Boker 1, Lot 17, Robbins-Middle subdivision blew out from 6003 ft, and abnd 6567 ft, Feb., 1934. Continental Co.'s Robbins 1, J. C. Franz Survey, quit at 6995 ft, in heaving shale, 1934. Top of the heaving shale was found at 6465 ft. Continental's Feife 1, in heaving shale at 7541 ft, abnd 7620 ft, May, 1936. Continental's Robbins 2, 2800 ft ne of Robbins 1, stopped in Frio at 11,612 ft, May, 1937. Csg was set at 8910 ft, passed through heaving shale. Robbins 2 is the deepest well ever dr in the Texas Gulf Coast. **Principal Leaseholder:** Continental Oil Co. **Heaving Shale:** It has been a major factor in drilling in this area and has condemned many prospects along this trend. It is found under the Boker, McRobbins and Ferf tracts in Discorbis, Heterostegina and Marginulina formations. From 500 to 3476 ft has been penetrated. Top of heave has been found at 6123 ft, 6564 ft, and 6648 ft.

COLLEGEPORT*

Four mi n of Collegeport, centering around J. C. Hall, A. Farquaha and W. Hall surveys. **Means of Discovery:** Reflection seismograph, Geo. Strake, 1934. Torsion balance and reflection seismograph. Stanolind Oil & Gas Co., reported to have shown a "high" in this area. Continental Oil Co. worked area with geophysical instruments. Humble Oil & Refining Co. worked with torsion balance, 1933. **Principal Leaseholders:** Geo. Strake, Stanolind Oil & Gas Co., Glenn H. McCarthy. **Remarks:** Lack of interest in the area due to heaving shale.

HAWKINSVILLE

Northeast of Hawkinsville, centering around Kingston & Powell, Thos. Williams surveys. **Means of Discovery:** Reflection seismograph, Gulf Prod. Co., 1928. Geophysical work, Sun Oil Co., 1935. **Discovery Well:** Existence of a dome was proven by Gulf's Craig 1, July, 1925, when abnd in cap rock at 286 ft. First oil producer was Sun Oil Co.'s Craig 1. 16 bbls, 30.4 gravity oil per hour after perforating casing at 5150 to 5175 ft. Well later made salt water and after reworking, was comp as pumper. **Type Structure:** "Mushroom" type salt dome, top cap rock 100 ft, salt 600 ft. **Producing Formations:** Miocene sands, 5150 to 5175 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 10. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** No estimate. **Production Through June, 1938:** 2000 bbls. **Deepest Hole:** Sun Oil Co.'s Craig 2, encountered salt 796 to 2120 ft and at 3103 ft, dr to 6905 ft, abnd Sept., 1937. **Casing Programs:** Sun Oil Co., 18⅝-in, 258 ft; 13-in, 671 ft; 7-in, 5894 ft. **Oil Outlet:** None. **Gravity Oil:** 30.4. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Sun Oil Co., Humble Oil & Refining Co. **Remarks:** Gulf Production Co. once owned this dome before Sun Oil Co., and Humble Oil & Refining Co. obtained leases. **Heaving Shale:** Is found under Craig tract in Marginulina formation. Top of heave is logged around 5814 ft and over 510 ft has been penetrated.

JUANITA*

Three mi e of Juanita, between Markham and Buckeye oil fields, centering around R. Graves, J. Partin and D. Etherton surveys. **Means of Discovery:** Torsion balance, Gulf Production Co., 1933. Republic Production Co., 1934. **Principal Leaseholder:** Gulf Oil Corp.

MAD ISLAND

Four mi s Collegeport, G. Wheelwright Survey. **Means of Discovery:** Torsion balance, Watts Oil Co., 1930. The Texas Co.'s reflection, 1935-36 failed to indicate structure to west. **Extent of Development:** Watts Oil Co.'s Titus 1, abnd in shale, July, 1930, 3509 ft.

MARKHAM

Three mi nw Markham, Wm. Hadden, Hny. Parker surveys. **Means of Discovery:** Elevation, gas. **Discovery Well:** Hardy Oil Co.'s Hudson 1, 3600 bbls, 1734 ft, Jan. 6, 1908. **Structure:** Salt dome, top cap rock 1500 ft. **Producing Formations:** Miocene sands at 936, 1900, 2350, 3200, 3400, 3600, 3800, 4100 and 4350 ft. **Approximate Elevation:** 40-60 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 220; 200 developed. **Daily Production, July 1, 1938:** 1420 bbls. **Estimated Ultimate Recovery:** 10,500,000 bbls. **Production Through June, 1938:** 6,867,728 bbls. **Indicated Remaining Reserve:** 3,632,272 bbls. **Deepest Hole:** C. B. Hamill's Elkins 2, abn in heaving shale, 6044 ft, June, 1932, in Vicksburg. **Casing Programs:** Hamil & Smith, 10-in, 460 ft; 7-in, 3600 to 3900 ft. **Oil Outlet:** Texas Pipe Line Co., 6-in. **Range of Gravity:** 25-40. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Rycade Oil Corp., Ike Laughlin et al, E. M. Hamill, C. B. Hamill, Humble Oil & Refining Co., Jno. Deering, L. P. Smith, The Texas Co., United North & South Development Co., Powers Prod. Co., Harrison & Abercrombie. **Remarks: Heaving Shale:** Is found under Carlson, Fairchild, Kountz, Hudson, Sisk, Elkiss, and Northern Irrigation tracts in Vicksburg and Jackson formations. Top of heave is usually found around 2000 ft and 4950 ft. About 500 ft of heaving shale has been penetrated.

MATAGORDA*

North of Matagorda, centering around Selkirk Island. **Means of Discovery:** Gas shows in Colorado river; geophysical work, 1934-1935. Reflection seismograph, The Texas Co., 1937. **Principal**

*Prospect. †Salt dome, no production. ‡Gas field.

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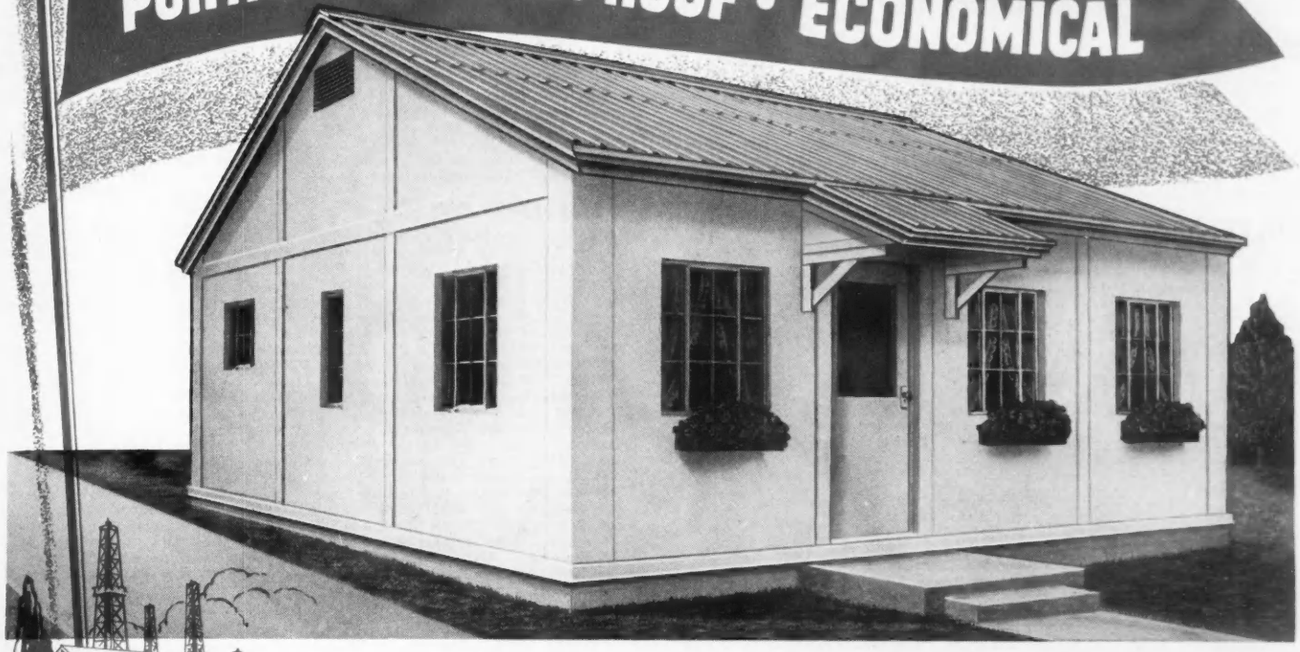

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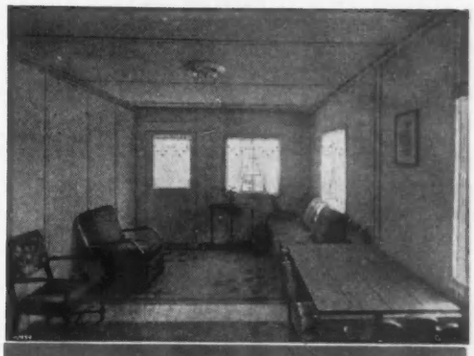

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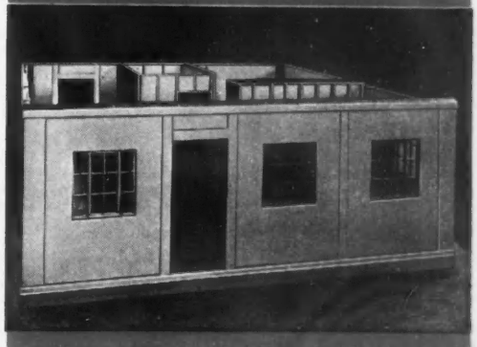

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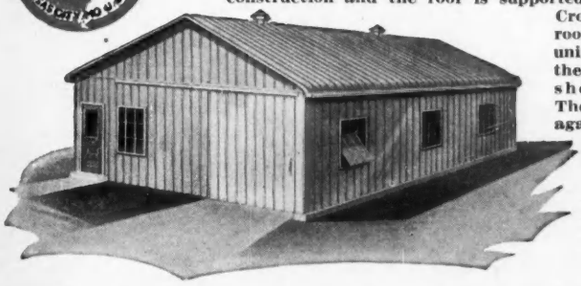

COLUMBIAN STEEL TANK COMPANY

P. O. BOX 4226F **KANSAS CITY, MISSOURI**

Leaseholders: Sun Oil Co., Humble Oil & Refining Co., Stanolind Oil & Gas Co., The Texas Co., Gulf Oil Corp., Felmont Oil Co. **Remarks:** Also known as Wild Crow Island or McNabb Island.

McCROSKEY—Armour

North of Van Vleck field centering around I. & G. N. Section 7, D. Fenton surveys. **Means of Discovery:** Reflection seismograph by Petty Exploration Co. for Pierce Estate in 1937. Skelly Oil Co. shot the area and failed to find structure. **Discovery Well:** Pierce Estate's Fee 1, February 18, 1938, 11 bbls 33 gravity oil per hour through 3/16-in choke, 6620 to 6624 ft. **Type Structure:** Nosing. **Approximate Elevation:** 70 ft. **Producing Formations:** Marginulina-Frio 6620 to 6624 ft. **Average Sand Thickness:** 4 ft. **Productive Acres:** 100; 40 developed. **Daily Production, July 1, 1938:** 156 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 10,393 bbls. **Indicated Remaining Reserve:** 989,607 bbls. **Casing Programs:** Pierce Estate, 10¾-in, 1098 ft; 7-in, 6619 ft. **Oil Outlet:** Tank cars. **Gravity Oil:** 33-36. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** Pierce Estate Fee land.

MIDFIELD*

Centering around I. & G. N. Sections 3, 11 and P. J. Poole Survey, 3⅛ mi nw Midfield. **Means of Discovery:** Torsion balance, reflection seismograph, The Texas Co., 1934. **Extent of Development:** Marathon Oil Co.'s Kountz 1, cored salt water sand in Frio 6127 to 6161 ft, dry at 7000 ft in Frio, Aug., 1936. The Texas Co.'s Kountz 1, P. J. Poole Survey, salt water sands 5839 to 6034 ft, abn 6525 ft, May, 1936. **Principal Leaseholders:** The Texas Co., Marathon Oil Co. **Remarks:** J. K. Dorrance worked with reflection seismograph in this area in 1937.

NORTH MARKHAM*

Six mi n of Markham, centering around W. A. Hurd and J. Betts surveys. **Means of Discovery:** Torsion balance, H. C. Cockburn, 1934. Reflection seismograph, Texas Gulf Production Co., Texas Louisiana Co., 1935. Sun Oil Co., 1937. **Principal Leaseholders:** H. C. Cockburn, Texas Gulf Production Co. **Remarks:** H. C. Cockburn assigned 15,000 acres to Texas Gulf Production Co., Sun Oil Co., Ohio Oil Co.

NORTH TURTLE BAY*

North of Turtle Bay and west of Palacios, centering around J. Duncan and E. P. Crosby surveys. **Means of Discovery:** Sun Oil Co., reflection seismograph, 1936. **Principal Leaseholder:** Sun Oil Co.

PALACIOS

Near Palacios, centering around L. Goodwin Survey. **Means of Discovery:** Reflection seismograph by Hoard Exploration Co. for G. W. Strake. Was later shot by Sun Oil Co., 1934, and then worked by Glenn H. McCarthy. **Discovery Well:** Glenn H. McCarthy's Foley Land Co. 1, March 31, 1937, 175 bbls fluid, 30 percent 53 gravity distillate, ¼-in choke, from perforated csg at 7830 to 7880 ft. **Type Structure:** Regarded as deep-seated salt dome. **Approximate Elevation:** 40-60 ft. **Producing Formations:** Frio sands of Oligocene at 7830 to 7842 ft, 7875 to 7895 ft, 9245-75 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 360; 80 developed. **Daily Production, July 1, 1938:** 96 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 69,953 bbls. **Indicated Remaining Reserve:** 930,047 bbls. **Deepest Hole:** Sun Oil Co.'s Bayshore 1, gas sand 7600 ft, set 9⅝-in, 8747 ft; 7-in, 11,327 ft, perforated 9715-50 ft, showed salt water; pb perforated 9245-76 (20 shots) well blew out, caught fire, killed and comp, Jan. 13, 1938, 350 bbls daily, 54 gravity, 28,000,000 average ft gas. **Casing Programs:** Atlantic Refining Co., 10-in, 2525 ft; 7-in, 7890 to 7940 ft. **Oil Outlets:** Tank car and barge. **Gravity Oil:** 7830-7895 ft; 9245-75 ft, 54. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholders:** G. W. Strake, Sun Oil Co., Glenn H. McCarthy, Atlantic Refining Co. **Remarks:** Many companies discounted this area due to heaving shale; none was found in the discovery well. Foley Land Co. 1 was drilled to 8682 ft and 7-in csg was set at 8662 ft. It was perforated at 8573 to 8583 ft and the well came in flowing gas, wash water, and 47.9 gravity distillate. Pressures began dropping and the well was plugged back to the producing sand.

PIERCE ESTATE*

Three mi s Pledger, centering in Isaac Foster Survey. **Means of Discovery:** Showed negative in geophysical work by Humble Oil & Refining Co., 1932; but Humble and Gulf Production Co., holding 10,000-acre block, drilled two deep tests despite geophysical evidence. **Extent of Development:** Humble and Gulf's Pierce Estate 1, near center of nw line Isaac Foster Survey, quit at 7323 ft early 1933. Pierce Estate 2, near center of sw line of Wm. C. Carson Survey, quit in shale at 8115 ft, June, 1933. No showings were reported in either and they presumably gave no encouragement with respect to depths at which formations were encountered.

SARGENT*

Four mi sw Hawkinsville dome, central portion Van Dorn and Bayless and G. Penticost surveys. **Means of Discovery:** Surface indications; Shell Petroleum Corp. seismograph, 1929. The Texas Co. shot with reflection from Sargent to Cedar Lane the latter part of 1935. Stanolind Oil & Gas Co.'s torsion balance crew ran a line from Cedar Lane to Sheppards Mott and Wadsworth. Se of Sargent, Kirk Hamil has a 10-year lease on 5400 acres acquired in June, 1935. **Remarks:** In the extreme se corner of the county and se of Sargent, Humble Oil & Refining Co. and Gulf Production Co. worked the area nw of this block with torsion balance in 1932. Shell Petroleum Corp. and Humble did work in the general area with seismograph reflection the early part of 1933.

SHEPPARD'S MOTT

Six mi sw Cedar Lane, D. McCarty, F. Fry, J. Dwyer, S. R. Fisher surveys. **Means of Discovery:** Surface evidence; showings in old wildcats; torsion balance, North American Exploration Co. for H. C. Cockburn, 1928. Torsion balance showed as large dome with local highs on north and south ends. **Discovery Well:** H. M. Smith Corp.'s Wadsworth 1, 5 bbls day, 39.2 gravity oil from Frio sands 8852 ft, July 7, 1935. **Structure:** Deep seated salt dome, but no dome material encountered. **Producing Formations:** Lower Marginulina-Frio sands at 8852 ft. **Approximate Elevation:** 20-40 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 20; 20 developed. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** Field abn. **Production Through June, 1938:** 2000 bbls. **Deepest Hole:** Continental Oil Co.'s Hawkins 2, topped sand 8830, dr 9210 ft, abn, Sept., 1937. **Casing Programs:** Continental Oil Co., 11¾-in, 5409 ft. Helmerick & Payne, 13⅜-in, 1680 ft, 5-in, 7414 ft. **Oil Outlet:** Tanks. **Range of Gravity:** 39.2. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** H. C. Cockburn, H. M. Smith Corp., Helmerick & Payne, Stanolind Oil & Gas Co., Texas Gulf Producing Co., Superior Oil Producing Co. **Remarks:** Cockburn Oil Corp.'s Hawkins 2, in Dec., 1930, produced about 3 bbls, 37 gravity oil in 2 days with wash water at 5244 ft, but was later abnd at that depth on account of salt water intrusion. **Heaving Shale:** Is found under the Hawkins and Wadsworth tracts in Discorbis zone. From 319 to 1880 ft of heaving shale has been penetrated.

SIMPSONVILLE—Robbins Ranch

North of Citrus Grove and east of Simpsonville centering C. H. Vanderveer Survey. **Means of Discovery:** Reflection seismograph, G. Coates, 1936, Sun Oil Co., 1937. **Extent of Development:** Sun Oil Co.'s Robbins 1, dr to 10,160 ft, set 7-in csg 10,154 ft, made series of tests up hole, was finally abn at 3890 ft, June, 1938. **Principal Leaseholder:** Sun Oil Co.

SOUTH BAY CITY

One and one half mi se Bay City, centering around E. Hall and J. S. Cleveland surveys. **Means of Discovery:** Reflection seismograph, Hamman Exploration Company, 1934 and 1935. **Discovery Well:** Hamman Exploration Co.'s M. Cleveland 1, March 1, 1936, 25 bbls 38 gravity oil first hour from 9361½ to 9370 ft. **Structure:** Deep seated salt dome. **Producing Formations:** Marginulina and Frio sands of the Oligocene from perforations 8100-60 ft, 9154-76 ft, and 9310 to 9370 ft. **Approximate Elevation:** 50 to 60 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 500; 150 developed. **Daily Production, July 1, 1938:** 1020 bbls. **Estimated Ultimate Recovery:** 3,000,000 bbls. **Production Through June, 1938:** 371,949 bbls. **Indicated Remaining Reserve:** 2,628,051 bbls. **Deepest Hole:** Hamman Exploration Co.'s Crooker 1, workover, cored over 100 ft of sand at 10,000 ft, believed to be Old Ocean sand, dr to 10,497 ft, pb and comp 8148 ft, June, 1938. **Casing Programs:** Hamman Exploration Co., 10-in, 202 ft; 7-in, 8000, 9600 ft. **Oil Outlets:** 2-in pipe to loading rack then by tank cars. **Gravity Oil:** 8154-60 ft, 41; 9155-75 ft, 55; 9361-9370 ft, 35. **Rigs Running, July 1, 1938:** Three. **Principal Leaseholders:** Hamman Exploration Co., 6000 acres; Pan American Production Co., Smith & McDannald. **Remarks:** Often referred to as Hamman or Bay City field. Hamman Exploration Co. is constructing a gasoline plant in the field.

SUGAR VALLEY*

Four mi e of Van Vleck, centering around P. Barnett and A. Sojourner, F. George, Battle Berry, and Williams surveys. **Means of Discovery:** Reflection seismograph, The Texas Co., Skelly Oil Co., 1936. **Extent of Development:** Royal Oil Co.'s Ewing 1, salt water sand in Frio, dry 9130 ft, Aug., 1937. **Principal Leaseholders:** Skelly Oil Co., The Texas Co., Felmont Oil Corp., Royal Oil Co.

VAN VLECK

One and a half mi nw Van Vleck, Maria Cummins and I. & G. N. Section 10, surveys. **Means of Discovery:** Surface indications; old shallow wildcats, reflection seismograph, DeGolyer et al, 1932. **Discovery Well:** Skelly Oil Co.'s F. G. Cobb 1, M. Cummings Survey, 120 bbls, 56 gravity oil daily, ⅜-in choke, 7023-7076 ft, March 19, 1934; was drilled deeper and completed in sands from 7465-7468 ft, for 159 bbls daily through various size chokes, Nov. 6, 1935. **Structure:** Probably very deep salt dome, no salt reached. **Producing Formations:** Oligocene sand at 7023-7076 ft, 7461-7468 ft, 7474-7510 ft, 8217-8261 ft in Marginulina and Frio formations. **Approximate Elevation:** 55 to 75 ft. **Average Sand Thickness:** 21 ft. **Productive Acres:** 1000; 600 developed. **Daily Production, July 1, 1938:** 1771 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production Through June, 1938:** 1,557,450 bbls. **Indicated Remaining Reserve:** 18,442,550 bbls. **Deepest Hole:** Skelly Oil Co.'s Cobb B-14, dr to 11,465 ft, pb and comp 7496 ft, Jan., 1938. **Casing Programs:** Skelly Oil Co., 16-in, 40 ft; 10-in, 1450 ft; 7-in, 8250 ft. **Oil Outlet:** Texas Pipe Line Co., 4-in. **Range of Gravity:** 35-56. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholders:** Skelly Oil Co. and DeGolyer et al on 50-50 basis. **Remarks:** Skelly Oil Co.'s Cobb B-3 had over a half dozen showings of oil down to the bottom of the hole. Several drill stem tests were made which showed salt water. A special temperature recording device was run on the well which showed where the salt water was coming from. Sometimes referred to as Bay City field. The field has six oil sands. Wells are spaced 466 ft from lease line and 933 ft apart. Two strings of casing are set, including a 1400 ft string of surface. This applies to 7500-ft wells. If wells go below 7500 ft a third string is set. Gas/oil ratio is 2000/1.

WEST MARKHAM*

Seven mi w of Markham on Wharton-Matagorda County line, centering around I. & G. N. Section 21, and E. T. R.R. Section 103. **Means of Discovery:** Torsion balance, Eby & Milner, 1934. **Principal Leaseholders:** The Texas Co., Eby & Milner. **Remarks:** This block is closely connected with the Midfields area. Humble Oil & Refining Co. has a block north of this prospect in Wharton County.

WILSON CREEK

Southwest of Buckeye field, centering around J. B. & M. Cotton surveys. **Means of Discovery:** Reflection seismograph by United North and South Development Co. This structure was found while rechecking Buckeye. **Discovery Well:** United North & South Development Co.'s C. Stoddard 1, June 14, 1937, 7 bbls, 52 gravity

*Prospect. †Salt dome, no production. ‡Gas field.

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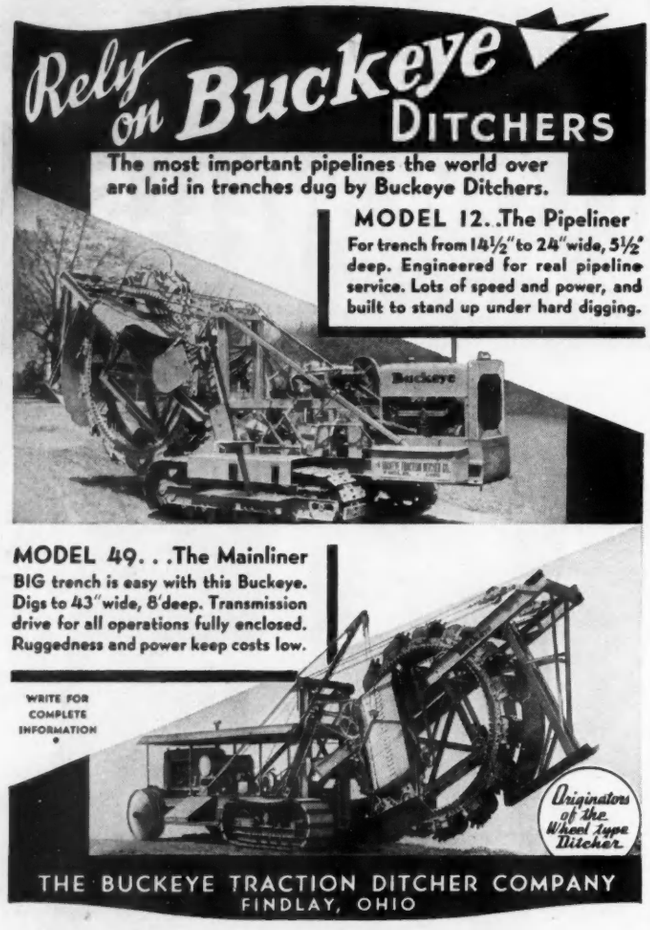
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distillate per hour, ¼-in choke, along with 2,000,000 cu ft of gas daily, at 9975 ft. **Type Structure:** Nosing. **Approximate Elevation:** 33-53 ft. **Producing Formations:** Frio formation of Oligocene at 7903 ft, and 9925 to 9975 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 40. **Daily Production, July 1, 1938:** Included with Buckeye. **Estimated Ultimate Recovery:** Included with Buckeye. **Production Through June, 1938:** Included with Buckeye. **Indicated Remaining Reserve:** Included with Buckeye. **Deepest Hole:** United North & South Development Co.'s Lambert 1, dr to 10,503 ft, pb and comp at 7903 ft, March, 1938. **Casing Programs:** United North & South Development Co., 7⅝-in, 8660 ft or 7-in, 9895 ft. **Oil Outlet:** Tank cars. **Gravity Oil:** 39-52. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** United North & South Development Co.

MONTGOMERY COUNTY

CONROE

Four mi se Conroe; following surveys: D. W. Collis, L. W. Weeden, W. B. Bridges, Evantha Scurry, Robt. Kuykendall, Jno. Davis, W.C. R.R. C. A-645, C. T. Darby, D. McIntyre, L. A. Lang, H. B. Littlefield, Jno. McHorse, I.&G.N. A-649 and 650, J. G. Watson, W. P. McComb, M. W. Real, T. C. Howell, A. McCown A-370, A. M. Folk, Theo. Slade, Jos. House A-250, G. A. West, T.&N.O. Nos. 5, 13, and 15, J. Massey, W. S. Rhodes A-764, C. B. Stewart, H. M. Crighton, S. Y. Sitton, Ransom House, W. Strickland, T. M. Wiggins, W. F. Stewart, E. C. Manning, W. S. Rhodes A-763, C. E. Granger, S. H. Bryan, W. C. C. Lynch, Alfonso Steel, Gowan Harris, Jno. Bricker, Ashby James, T.&N.O. Nos. 3 and 9, G. W. Wagers, J. F. Springfield, L. Smith and G. Harris. **Means of Discovery:** Surface indications, refraction seismograph and "trend play" instrumental in drilling of discovery well which was in northeast part present proven area. Prior to that test geophysics had also given evidence of the structure, showing apex near center of present proven area and consequently about two mi se discovery well; hence it was thought at first that geophysical prospect might be separate from field opened by Strake. **Discovery Well:** G. W. Strake's South Texas Development Co. 1, Dec. 13, 1931, 200 bbls gasoline and much gas, 1900 lbs closed in pressure, from sand at 4981-4991 ft. **Structure:** Very large domal structure, about six mi in diameter, possibly a deep seated salt dome although no dome material has been encountered. Has local highs, separated by saddle, on e and w sides, with oil sands arching over them; while between n and s ends several faults and a graben of large displacement run across field. **Producing Formations:** Minor oil-gas sand shortly below top of Cockfield (top zone of Yegua formation, Claiborne series of Eocene-Tertiary) around 5000 ft; and main oil sand lower in Cockfield at 5000 to 5250 ft, with depths of most wells from 5100 to 5150 ft. Oil and gas showings occur also in shallower sands. **Approximate Elevation:** 160-210 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 17,600; 17,520 developed. **Daily Production, July 1, 1938:** 30,860 bbls. **Estimated Ultimate Recovery:** 670,000,000 bbls. **Production Through June, 1938:** 92,719,532 bbls. **Indicated Remaining Reserve:** 577,280,468 bbls. **Deepest Hole:** West Production Co.'s Foster 3, se edge of field, dry at 8018 ft, Feb., 1936, in Yegua. **Casing Programs:** Humble Oil & Refining Co., 10-in, 1200 to 1400 ft; 7-in, 5000 to 5200 ft. **Oil Outlet:** Tide Water Pipe Line Co., 8-in, Humble Pipe Line Co., 8-in. American Liberty Pipe Line Co., 8-in. Sun Pipe Line Co., 6-in. American Liberty Oil Co.'s 8-in line from East Texas ties into line at Conroe then comes to Houston. **Range of Gravity:** 35-40. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Humble Oil & Refining Co., Tide Water Oil Co., Houston Oil Co., Republic Production Co., Strake Petroleum Corp., Brown & Wheeler, Inc., Sun Oil Co., The Texas Co., Alpha Petroleum Corp., Harrison and Abercrombie, Standard Oil Co. of Kansas. Above operators hold about 12,000 acres of productive or proven leases, and about 4700 acres additional are divided among numerous others. **Remarks:** Spaced 20 acres. Gas/oil ratio 2000/1.

DACUS*

Six mi nw Montgomery, centering around D. Roper, T. Shepherd, F. B. Wheeler, and J. Beuhn Surveys. **Means of Discovery:** Surface geology, reflection seismograph, Texas Seaboard Oil Co., 1934. **Extent of Development:** Smith & Cooper's Post 1, Roper Survey, had slight oil show, 2640 ft, oil and gas shows in Cockfield around 3700 ft, but salt water at latter depth; top Cockfield 3415 ft; quit 4007 ft, June, 1934. E. M. Compton's Bennett 1, Wheeler Survey, salt water 3156-3260 ft, quit 3601 ft, April, 1935. Wm. Thompson et al's Scott 1 showed fresh water in Hockleyensis and Cockfield sands, dry at 3674 ft, Feb., 1936. Scott 2, dry 3685 ft, May, 1936. Chapman & Smith's Delta Land 1 reported showing of oil 2250 to 2270 ft, quit in Cockfield at 4003 ft, April, 1936. Same operator's No. 2 topped rock 5121 ft, twisted off dr pipe, abn 5123 ft in Cockfield, May, 1936. H. W. Blumenthal's Delta Land 1, dry 4011 ft, June, 1936. **Rigs Running:** Two. **Principal Leaseholder:** Gulf Oil Corp.

DEERING*

Five mi nw Tamina, centering Henry Blood, S. Hodge Surveys. **Means of Discovery:** Surface geology. **Extent of Development:** Deering et al's Knight 1, D. F. Wilden Survey, quit at 4686 ft, 1931. Deering & Frazier's Rohlf 1, Henry Blood Survey, quit at 5650 ft, 1933. Showers & Moncrief's Chase Bank 1, D. Garrett Survey, quit at 5521 ft, 1933. Deering & Frazier's Hicks 1, T. Taylor Survey, salt water sand in Cockfield, 5579-92 ft, quit 5592 ft, 1934. Turnbull & Irwin's Carr 1, C. Allen Survey, salt water sand in Cockfield, 5593-5613 ft, dry 5953 ft, Sept., 1935. Jack Frazier's Maxey 1, J. Brown Survey, quit at 6009 ft in Cockfield, March, 1936. North of Frazier's well, T. J. Word's J. T. Bertrand 1, A. Hodge sur, quit at 5371 ft, May, 1937. **Principal Leaseholders:** Deering & Frazier, Stanolind Oil & Gas Co., United Gas Co., Empire Gas & Fuel Co., Sun Oil Co., Showers & Moncrief, Gulf Oil Corp., H. H. Weinert, Turnbull & Irwin, Shell Pet. Corp. **Remarks:** Also known as Tamina. South of this area at Huff-

*Prospect. †Salt dome, no production. ‡Gas field.

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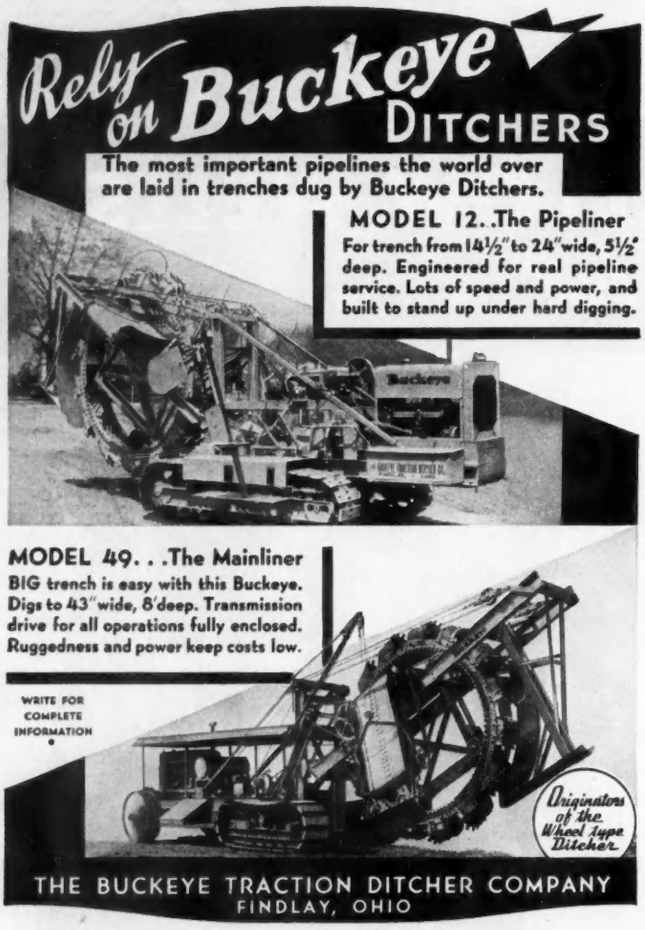
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MONTGOMERY COUNTY

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smith, Harris County, H. J. De Arman's Gieske 1, I. Bunker Survey, dry at 6120 ft, Dec., 1937.

EAST MONTGOMERY*

Five mi e Montgomery, John Cronkrite and J. J. Foster Surveys. **Means of Discovery:** Surface geology; core tests, seismograph, Rycade Oil Corp., 1931. **Extent of Development:** A. H. Parson et al's Drouth 1, nw Cronkrite Survey, show gas 3850 ft, dry 4125 ft, 1932; Drouth 2, se same survey, show gas 3950 ft, small show oil, 4225 ft, dry 4450 ft, April, 1933. **Remarks:** See West Conroe.

FOSTORIA*

Northwest Fostoria, centering around H. T. & B. Section 2. **Means of Discovery:** Sub-surface high reported. **Extent of Development:** Fostoria Lumber Co.'s Foster 1, dry 5580 ft, July, 1933.

GOODWIN*

One mi e Goodwin, J. Foster Survey. **Means of Discovery:** Surface geology; reflection seismograph, 1932. **Extent of Development:** Continental Oil Co. and J. Fohs' Rock Creek Lbr. Co. 1, abnd salt water sand, Feb., 1933.

MAGNOLIA

Centering around the town of Magnolia, J. Dorsey and W. T. Dunlavy Surveys, In Waller County, W. Hillhouse Survey. **Means of Discovery:** Reflection seismograph and torsion balance, Humble Oil & Refining Co., 1936. Core drilling, 1937. **Extent of Development:** Humble's South Texas Development, W. Hillhouse Survey, dry 6500 ft, Jan. 1, 1938 (core test). **Principal Leaseholder:** Humble Oil & Refining Co.

MONTGOMERY*

Centering around town of Montgomery, J. Corner Survey. **Means of Discovery:** Reflection seismograph, Amerada Petroleum Corp., Texas Seaboard Oil Co., Humble Oil & Refining Co.; torsion balance, Shell Petroleum Corp., The Texas Co. **Extent of Development:** C. G. Reynold's Stewart 1, dry 5500 ft, 1935; Sternberger et al's F. B. Swift 1, R. R. Rogers Survey (5 mi s), quit in Cockfield, 5025 ft, no important showings, 1933. About 3½ mi ne of Montgomery, H. E. William's Peel Estate 1, salt water sands 3724 to 3750 ft, 3818 to 3883 ft, abn 3975 ft, in Cockfield, Oct., 1936. **Principal Leaseholder:** Sun Oil Co. (4500 acres). **Remarks:** Sternberger's Swift 1 was drilled on evidence of a surface high.

NICHOLS SURVEY*

Four mi n and e Goodwin, centering around T. J. Nichols Survey. **Means of Discovery:** Surface geology, seismograph, 1932. **Extent of Development:** Core tests, Lowrie & Young; Pure Oil Co. McElroy Oil Corp.'s Damuth 1, Nichols Survey, dry at 5078 ft, 1932; McWhorter 1 quit at 5610 ft, 1933. Three mi nw, in P. Hamblin Survey, McElroy's Grogan 1 quit in Cockfield, 5001 ft, 1934; 3 mi ne, in J. Sealey Survey, Mound Creek Oil Co.'s Sealey 1 quit in Cockfield salt water sand at 5009 ft, 1933. Over mi se McElroy tests, R. L. Sprinkle's E. A. Rohlfs 1, H. Prosens Survey, quit at 5105 ft before reaching Cockfield. B. E. Bolyard's Atkinson 1, Robin George Survey, had salt water 4980-95 ft in Cockfield, quit 5150 ft, 1935. **Remarks:** Also known as Kern.

PINEHURST*

Four mi s Magnolia, S. J. McFarland Survey. **Means of Discovery:** Surface evidence induced drilling. Geophysics did not indicate salt dome, but structure indicated to southeast nearby by torsion balance, 1931. **Extent of Development:** Several shallow tests. Humble Oil & Refining Co.'s W. A. Renn 1, McFarland Survey, abnd 5634 ft, 1931.

SPLENDORA

Near town of Splendora, embracing portions of Wm. Willis, Wm. Barker, J. Blackman, J. Cole, M. B. Lawrence, and Walker County School Lands Surveys. Seven miles east of Conroe field. **Means of Discovery:** Reflection seismograph, Tide Water Oil Co. and Darby Petroleum Corp., 1933. **Discovery Well:** Steen Drilling Co.'s Long Leaf Lumber Co. 1, Walker County School Lands Survey, near center of west line of Barker Survey, 6041 ft, plugged back and completed in Cockfield sand at 5816-5824 ft, about June 7, 1934. The well flowed 47 bbls 69 gravity distillate in 12 hours with large volume of gas, with a three-eighths-inch casing and a quarter-inch choke on tubing, and tubing pressure 2100 lbs. **Structure:** Apparently a domal structure, possibly over a deeply buried salt mass, similar in general to other structures along the so-called Conroe trend. Drilling has been limited, however, to only a few wells, and conclusive information is not available as to details of the structure. **Producing Formation:** Cockfield sand at 5816-5824 ft. **Productive Area:** Only the discovery. **Extent of Development:** In 1932-1933 two wildcats were drilled within a few miles of the site of the Splendora discovery well. Three miles north Miller Production Co.'s Foster Lumber Co. 1, west end M. B. Lawrence Survey, quit at 5021 ft, late 1932. C. J. Daniel et al's Flowers (or Sailes) 1, Barker Survey, a mile east of discovery well, quit at 2200 ft, April, 1933. It was Humble Oil & Refining Co.'s Texas Long Leaf Lumber Co. 1, 1½ miles north of discovery well and in same survey, abnd 6238 ft, June, 1934. Humble's Anna M. Platte 1, Wm. Barker Survey, 3000 ft east of the discovery well quit at 6085 ft after drill stem test in the Cockfield showed salt water, Aug., 1934. R. R. Frankle, Tr.'s C. Neff 1, dry at 6037 ft, Jan., 1935. Paul Sanderson's Texas Long Leaf Lumber Co. 1, dry at 6452 ft, Aug., 1935. Tide Water Associated Oil Co.'s Corbit 1, nw of Splendora, J. Blackman Survey, cored salt water sands in Cockfield at 6330 to 6349 ft, abnd 6418 ft, June, 1936. Gates & Richard's Yarbrough 1, Wm. Barker Survey, dr salt water sands at 5918 to 5923 ft, quit at 6139 ft, Sept., 1936. G. E. Gates' Texas Long Leaf Lumber Co. 1, Walker County School Land Survey, topped Cockfield at 5750 ft, cored salt water sands 5750 to 5756 ft, abnd 6251 ft, June, 1937. **Deepest Hole:** Paul Sanderson's Texas Long Leaf Lumber Co. 1, Walker County School Land Survey, Block 6, abnd 6452 ft in Cockfield. **Estimated Ultimate Recovery:** 250,000 bbls. **Production Through 1935:** 1000 bbls. Field abnd. **Daily Production in January, 1938:** None. **Oil Outlet:** Trucks. **Range of Gravity:** 69. **Rigs Running, January 1, 1938:** None. **Principal Leaseholders:** Tide Water Oil Co., Darby Petroleum Corp., Humble Oil & Refining Co., Standard Oil Co. of Kansas, Steen Drilling Co.

WEST CONROE*

Three mi w Conroe, centering around M. Connor, R. Marsh and J. Pevehouse Surveys. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1934; later checked by torsion balance. **Extent of Development:** Shell Petroleum Corp.'s Creighton 1, salt water, quit in Cockfield, 5050 ft, 1934. Baker et al's Bender 1, L. H. M. Washington Survey, show oil 4750 ft, dry 4948 ft, 1934. J. W. Pilfner's Spiller 1, R. Marsh Survey, top Cockfield 4420 ft, salt water sand 4445 ft, abnd 4518 ft, Aug., 1937. **Principal Leaseholder:** Shell Petroleum Corp. (3000 acres). The Texas Co. and an independent operator have acreage to the north. **Remarks:** See Willis.

WILLIS*

Seven mi nw Willis, centering around J. Lindsley, G. W. Lewis, J. Stokley, Wm. Wier, T. Whitmore, U. S. Springer Surveys. **Means of Discovery:** Torsion balance, Southern Crude Oil Purchasing Co., Stanolind Oil & Gas Co., 1929; Gulf Production Co., The Texas Co., 1933. Gholson et al's Parks 1 showed oil and gas and started to an extensive drilling campaign in this area. **Extent of Development:** Sayre Oil Co.'s Delta L&T Co. 1, J. H. Truitt Survey, gas odor 3512 ft, gas and salt water, 3624-28 ft, quit in Cockfield, 5015 ft, 1934. Gholson et al's Parker 1, J. Lindley Survey, topped Cockfield at 3695 ft, oil sand 3707 ft, drill stem test, 3711-3765 ft showed oil and gas with closed-in pressure 360 lbs, later water showed up and casing pulled to repair leak, swabbing brought fluid up to 3000 ft but would not flow; shut in making estimated 15,000 ft gas, ¼-in choke, 3969 ft, Aug., 1935. T. T. Word's Delta L&T Co. 1, J. Hosletter Survey, salt water, 3635-53 ft in Cockfield, quit 3668 ft in Cockfield, Aug., 1935. Mid-Tex Oil Co.'s Delta L&T Co. 1, R. T. Oliver Survey, abnd salt water 4026 ft in Saline Bayou, Sept., 1935. Donday Oil Co.'s Trice 1, T. Gude Survey, slight oil show 3698-62 ft, dry 4132 ft in Saline Bayou, Sept., 1935. Geo. E. Smith's Delta L&T Co. 1, McBride Survey, dry 4228 ft, Sept., 1935. Chas. Gholson's T. J. Johnson 1, 2½ mi nw of Willis, W. Wier Survey, gas odor 3938 ft, salt water sands 3985-92 ft, quit in Cockfield at 3992 ft, March, 1936. Mid Texas Oil Co.'s Security Trust 1, G. W. Lewis Survey, showed 240 lbs pressure on drill-stem test at 4252-4300 ft, good odor oil in Cockfield, drilled salt water sand 4312-20 ft, abnd 4547 ft, May, 1936. Blumenthal's Delta Land 1, J. Stokley Survey, dry in Cockfield, Aug., 1936, at 4078 ft. Cored several shows of oil and salt water in Cockfield. W. O. Belniski's Wood 1, Wm. Wier Survey, showed gas and distillate from 3707-17 ft, drill-stem test 3710-42 ft; showed oily mud and 200 lbs pressure; cored 3742-57 ft, little free oil, June, 1936, the well flowed dry gas and wash water and later made a small amount of distillate, tubing pressure 880 lbs, casing, 1120 lbs. Later started making salt water and was killed and pb to 3720 ft. Seven-inch csg was set at 3720 ft, washed well with oil and July, 1936, it made a little dead oil. Drilled to 4000 ft, pb 3739 ft, set screen and flowed salt water. Gas from this well was used to drill another well. Red Bank Oil Co.'s Central Coal & Coke Co. 1, T. P. Whitmore Survey, drill salt water sands in Cockfield, abn 4005 ft, Sept., 1936. W. W. Chapman's T. Foster 1, D. Pevehouse Survey, cored salt water sands and was abn Feb., 1937, at 3678 ft. The Texas Co.'s L. Crawford 1 topped Cockfield at 4255 ft, abn 4620 ft, July, 1937. **Remarks:** Most operators have dropped leases in this area.

NEWTON COUNTY

BLEAKWOOD*

Three mi nw Bleakwood, centering in Henry Cochran Survey. **Means of Discovery:** Trend play; surface geology, reflection seismograph, Tide Water Oil Co. and Darby Petroleum Corp., 1934. **Extent of Development:** Tide Water Oil Co. and Darby Petroleum Corp.'s Southwestern Lumber Co. 1, salt water in Cockfield, dry 5858 ft. **Principal Leaseholder:** Republic Production Co.

BUNKER HILL*

East of Bunker Hill, on Newton-Jasper County line, centering H&TC Sections 22 and 28. **Means of Discovery:** Torsion balance, reflection seismograph, Humble Oil & Refining Co., 1933-34; geophysics, Republic Production Co. and Houston Oil Co. **Extent of Development:** Undrilled. **Principal Leaseholders:** Republic Production Co. and Houston Oil Co. fee mineral leases.

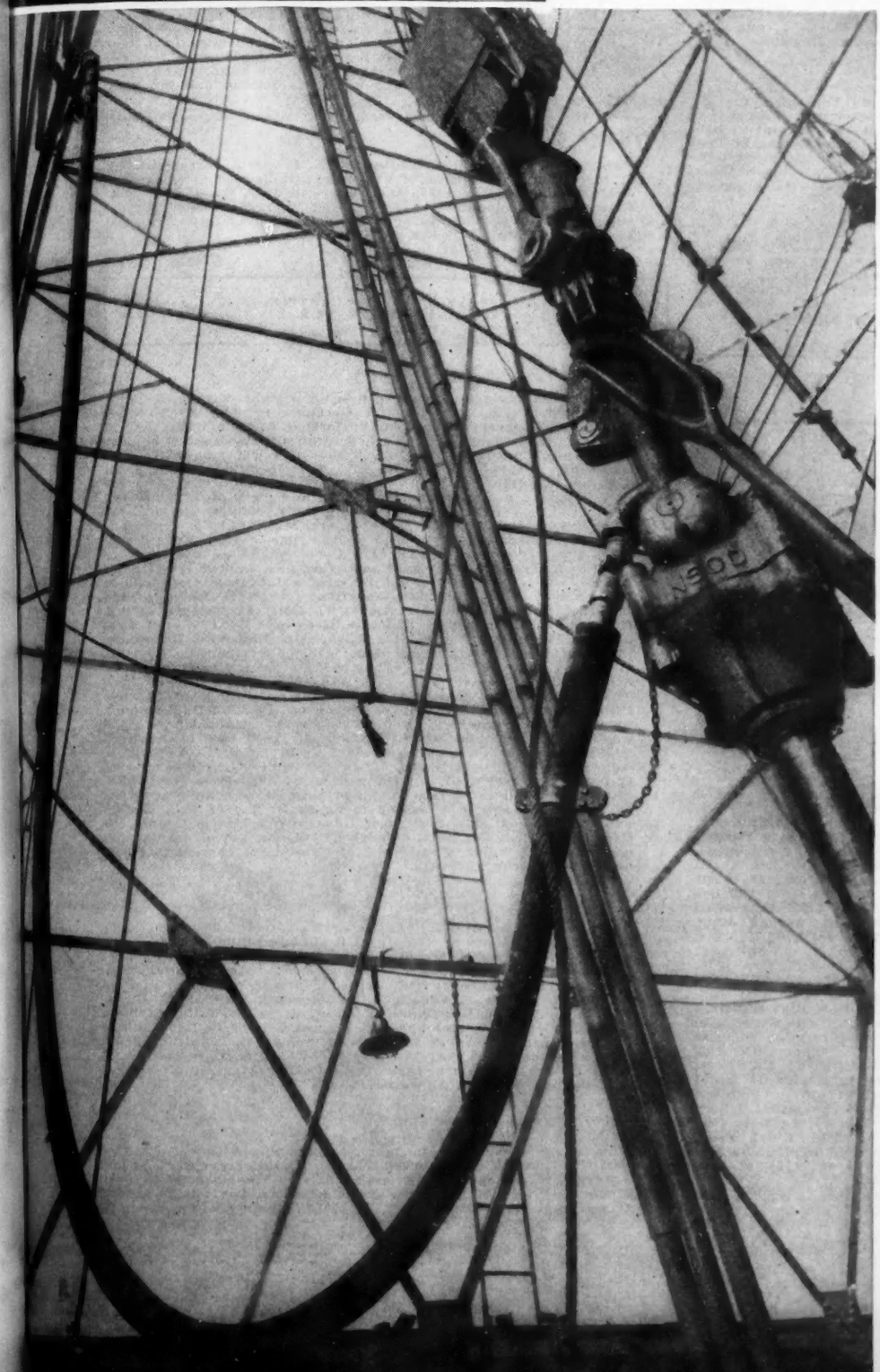
CALL

Centering around H&TC Section 42. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1933 and 1934; Republic Production Co. and Houston Oil Co., 1934, 1935 and 1936; latter also worked with torsion balance. **Discovery Well:** Houston Oil Co.'s Pevey Moore 1, Sept. 22, 1937, 800 bbls daily, ½-in choke, little salt water, from perforations at 6908 to 6918 ft. Potential showed 126 bbls, 29 gravity oil daily through 3/16-in choke. **Structure:** Anticline. **Approximate Elevation:** 80-150 ft. **Producing Formations:** Cockfield sands at 6908 to 6918 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 30 bbls. **Estimated Ultimate Recovery:** 1,500,000 bbls. **Production Through June, 1938:** 9704 bbls. **Indicated Remaining Reserve:** 1,490,296 bbls. **Deepest Hole:** Houston Oil Co.'s Sabine Tram 2, tested 7105 ft, flowed 40-gravity pipe line oil for three hours and salt water came in and was killed. Hole was drilled to 7380 ft, abn, Dec., 1937. **Casing Programs:** Houston Oil Co., 16-in, 50 ft; 10¾-in, 1200 ft; 7-in, 6900 to 7100 ft. **Oil Outlet:** Trucks. **Gravity Oil:** 6908 to 6918 ft, 29. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Houston Oil Co. and Republic Production Co. **Remarks:** Only the dis-

•Prospect. †Salt dome, no production. ‡Gas field.

"IT'S THE 'SAVING-EST' HOSE I'VE EVER SEEN! IT'S NEOPRENE LINED

Handles both mud and oil"



HERE'S the hose that leads a double life and a long one. It's hose that's lined with Du Pont *neoprene*.

With neoprene-lined hose you can handle both mud and oil . . . then go on to the next job and the hose will be as good as ever. Even after long stretches of oil pressure drilling, it can take all the mud and grit you can feed it. For neoprene resists abrasion, even when oil-soaked.

Be sure to specify neoprene-lined rotary hose. You'll save time and trouble in drilling . . . for you won't have to stop to change hose between mud and oil. You'll save money . . . for a neoprene-lined hose lasts so much longer. That's why operators call neoprene just about the "saving-est" material in the oil fields!

E. I. DU PONT DE NEMOURS & CO., INC.
RUBBER CHEMICALS DIVISION
WILMINGTON, DELAWARE

DU PONT
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Ask your supplier for

NEOPRENE

lined rotary hose

. . . OR WRITE US FOR A LIST OF MANUFACTURERS

covery well has produced oil out of over a half dozen tests drilled.

DEWEYVILLE*

A. Jordan, W. Wilson and surveys to west, 2½ mi s Deweyville. **Means of Discovery:** Surface indications, core drilling. **Extent of Development:** Humble Oil & Refining Co. drilled series cores to about 1000 ft. **Remarks:** Gulf Oil Corp. (5000 acres) and Sun Oil Co. (5000 acres) hold leases n of Deweyville.

GIST*

F. Stover Survey No. 4, 2½ mi se Gist. **Means of Discovery:** Surface indications. **Extent of Development:** Sun Oil Co.'s Peavy-Moore 1, Stover Survey, abnd in hard sand, 7225 ft, 1932; no showings. **Principal Leaseholder:** Sun Oil Co.

NORTHEAST BUNKER HILL*

Northeast of Bunker Hill, centering H&TB Section 28. **Means of Discovery:** Reflection seismograph and torsion balance, Humble Oil & Refining Co., 1934 and 1935. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble. **Remarks:** Humble's leases run to 1941-1947; has taken additional acreage to east from Sabine Tram Co.

SABINE TRAM BLOCK "2"

Centering around Nancy Guthrie Survey. **Means of Discovery:** Torsion balance and reflection seismograph, Republic Production Co., 1936. **Principal Leaseholders:** Houston Oil Co. and Republic Production Co. **Remarks:** See Call, which was block "1" and also see Sabine Block "3" South Louisiana, Calcasieu Parish.

SOUTHEAST CALL*

Southeast of Call field and centering around D. Deark and E. Shoemaker Surveys. **Means of Discovery:** Reflection seismograph and torsion balance, Gulf Oil Corp., 1934 and 1935. **Extent of Development:** Undrilled. **Principal Leaseholder:** Gulf. **Remarks:** The leases extend in this area to the Sabine River and across into Louisiana. Some of the leases expire in 1939. This block joins Humble Oil & Refining Co.'s Northeast Bunker Hill prospect on the north.

WEST DEWEYVILLE*

Between the Deweyville and Gist prospects, and west of the town of Deweyville, centering H&TB Sections 13, 14, 15, 16, 17, 18. **Means of Discovery:** Reflection seismograph and torsion balance, 1934 and 1935, by Humble Oil & Refining Co. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble.

ORANGE COUNTY

COW BAYOU*

Southeast of Orange field, centering Wm. Dykes and M. Latham Surveys. **Means of Discovery:** Reflection seismograph, Tide Water Associated Oil Co., 1936. **Extent of Development:** Tide Water Associated Oil Co.'s Brown 1, dry in Frio at 7706 ft, July, 1936; Brown B-1, Wm. Dykes sur, salt water sand in Frio at 7801 ft, quit at 7867 ft, Sept., 1936. The Texas Co.'s Lutcher Moore 1, 3 mi s of Orange, dry at 8399 ft in salt water sand, June, 1938. **Principal Leaseholders:** Tide Water Associated Oil Co., Pan American Prod. Co., Sun Oil Co., The Texas Co.

NORTH VIDOR*

Nine mi ne Beaumont, E. Hurst No. 15, T. & N. O. 34, R. Wier, E. Stover, J. W. Swisher Surveys. **Means of Discovery:** Surface indications. **Extent of Development:** Houston Oil Co.'s Hurst 1, swc E. Hurst No. 15, abnd in shale, 6025 ft, 1932; no showings. E. L. Smith Oil Co.'s Miller-Vidor 1, J. W. Swisher Survey, abnd 6225 ft, 1932.

ORANGE

Six mi w Orange. Wm. Dyson, S. M. Luce, B. Garner, J. Dyson Surveys. **Means of Discovery:** Broken surface, gas escapes. **Discovery Well:** Rio Bravo Oil Co.'s Bland 1, 500 bbls, 3128 ft, Aug. 13, 1913. **Structure:** Salt dome. Top salt 7120 ft. **Producing Formations:** Largely lenticular sands; Pliocene, Miocene and Oligocene, 2500 to 5303 ft; gas and distillate sands at 5585 to 5619 ft. Oil sands 5908-75 ft; 6118-23 ft. **Approximate Elevation:** 10-30 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 800; 600 developed. **Daily Production, July 1, 1938:** 1365 bbls. **Estimated Ultimate Recovery:** 40,000,000 bbls. **Production Through June, 1938:** 32,434,223 bbls. **Indicated Remaining Reserve:** 7,565,777 bbls. **Deepest Hole:** Texas Canadian Oil Corp.'s Bland 1, n flank test, dr oil sands at 7103 to 7104 ft in Frio, quit at 7550 ft, May, 1936. **Casing Program:** Tillery & Ryan, 10-in, 708 ft; 7-in, 5930 ft. **Oil Outlet:** Humble Pipe Line Co., 8-in. Sun Pipe Line Co., 6-in. Gulf Pipe Line Co., 6-in. **Range of Gravity:** 20-35.8. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Gulf Oil Corp., Sun Oil Co., Brownie-Babette Oil Co., Rex Petroleum Co., Sinclair Prairie Oil Co., Humble Oil & Refining Co., Texhoma Oil Co., Orange Petroleum Co., Continental Oil Co., Rycade Oil Corp., J. R. Turnbull, and United Gas Co. **Heaving Shale:** Is found under Adams, Huggins, Cow Bayou, and Boyles tracts in Oligocene formation around 4675 ft, 5120 ft, and 5650 ft. **Remarks:** Tillery and Ryan revived dr on sw flank, Nov., 1937, when new Frio sand was logged 5928-46 ft. On n flank of field, Union Prod. Co.'s Lutcher Moore 1 logged first salt in field at 7120 ft and cored salt to 7315 ft. It was pb and comp April, 1938, at 5960 ft in new sand for north side of field.

*Prospect. †Salt dome, no production. ‡Gas field.

PORT NECHES

Two mi n Port Neches. Mary E. Hall Nos. 1 and 2, and T. J. Notgrass, Jacob Beaumont, J. V. Polk Surveys. **Means of Discovery:** Seismograph, The Texas Co., 1928. **Discovery Well:** The Texas Co.'s Kuhn 1, first test after geophysical work, 1900 bbls 21.5 gravity, 3160 ft, May 9, 1929. **Structure:** Salt dome, top salt 7250 ft. **Producing Formations:** Pliocene-Miocene sands around 3150, 3750, 4150, 4400 and 4811 ft; Marginulina-Frio sands at 5871 to 5931 ft. **Approximate Elevation:** 10-30 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 225; 150 developed. **Daily Production, July 1, 1938:** 1010 bbls. **Estimated Ultimate Recovery:** 12,000,000 bbls. **Production Through June, 1938:** 4,692,888 bbls. **Indicated Remaining Reserve:** 7,307,111 bbls. **Deepest Hole:** Texas Co.'s Orange National Bank 2, K. Beaumont Survey, dry at 7667 ft in Vicksburg, July, 1934. **Casing Program:** Texas Co., 15½, 16, or 20-in from 92 to 509 ft; 10-in, 1175 ft; 6 or 6⅝-in, 3101 to 5896 ft. **Oil Outlets:** Sun Pipe Line Co., 6-in; Humble Pipe Line Co., 8-in; Texas Pipe Line Co. **Range of Gravity:** 19-38. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** The Texas Co. **Heaving Shale:** Is found under Kuhn tract around 7000 ft.

SOUTHWEST ORANGE*

Southwest of Orange, J. Jett, A. Nelson Surveys. **Means of Discovery:** Torsion balance, L. H. Williams, 1935; reflection seismograph, Felmont Oil Corp. **Extent of Development:** Dick Schwab's Banker Rutan 1, gas show 5590-96 ft, salt water sand 7170-7205 ft, dry 7265 ft in Frio, 1935.

SPEAR*

Centering common corner Hardin and Jefferson counties on Neches River which is Orange County w line; Thos. Spear Survey, Jefferson County, and Nancy Davis and Pinckney Lout Surveys, Orange County. **Means of Discovery:** Seismograph, Sun Oil Co., 1928. **Extent of Development:** None since seismograph; previously shallow tests mile north in Martin Palmer and Pinckney Lout Surveys.

VIDOR*

Two mi n Vidor, 6 mi ne Beaumont, E. Lewis, J. Davenport, W. C. Sharp Surveys. **Means of Discovery:** Reflection seismograph, Gulf Production Co., 1928, and reshot in 1932, after deep test. **Extent of Development:** Gulf's Miller-Vidor 1, Lewis Survey, abnd in sand, 6500 ft, 1931; shallow tests previously. **Principal Leaseholders:** Gulf and Sun Oil Co.

POLK COUNTY

ACE

Eight mi se Livingston field, centering around corners of Peter J. Menard, P. A. Sublett, and Geraldus S. Thomas Surveys. **Means of Discovery:** Trend play; torsion balance indication of deep dome. **Discovery Well:** Dick Schwab's Kirby-West 2, se part Geraldus S. Thomas Survey, 3,000,000 cu ft wet gas daily, with occasional sprays 42.5 gravity oil, through ¼-in choke, from Cockfield at 4740-4856 ft, Dec. 26, 1933. Although the discovery well produced a large quantity of gas and distillate the first oil well was Dick Schwab's Kirby 1-A, P. A. Sublett Survey, 215 bbls, 40.4 gr pipe line oil in 18½ hours, May 31, 1936. On potential test it made 349 bbls, ¼-in choke, June 3, 1936. **Type Structure:** Possibly a deep seated salt dome; no domal material encountered. **Producing Formations:** Cockfield, upper portion of Eocene, at 4740-4856 ft. First oil production from Cockfield at 4805 to 4815 ft. **Approximate Elevation:** 120-170 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 50. **Daily Production, July 1, 1938:** 60 bbls. **Estimated Ultimate Recovery:** 500,000 bbls. **Production Through June, 1938:** 114,390 bbls. **Indicated Remaining Reserve:** 385,610 bbls. **Deepest Hole:** Alpha Petroleum Co.'s Kirby-West B-1, dry at 5508 ft, June, 1934. **Casing Program:** Dick Schwab, 10-in, 800 ft; 7-in, 4700 and 4800 ft. **Oil Outlet:** Tank cars. **Range of Gravity:** 40-64. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Alpha Petroleum Co., Shell Petroleum Corp., Peyton Brothers. **Remarks:** Second gas well of field was Alpha Petroleum Co.'s Kirby-West 1, 700 ft west of discovery well. It was completed at 4899-4911 ft in April, 1934. Prior to completion of discovery well, Dick Schwab's Kirby-West 1, 600 ft ne of discovery well, had been abnd at 4898 ft in Nov., 1933, although it had for a time given promise of proving productive. Several tests have been drilled along south line of Polk County and in northeast and northwest Liberty and Harris County, by Kirby Petroleum Co., Dick Schwab and Alpha Petroleum Co., but all tested salt water. The 1934 Gulf Coast issue carried this field as Schwab-Kirby gas field.

CORRIGAN*

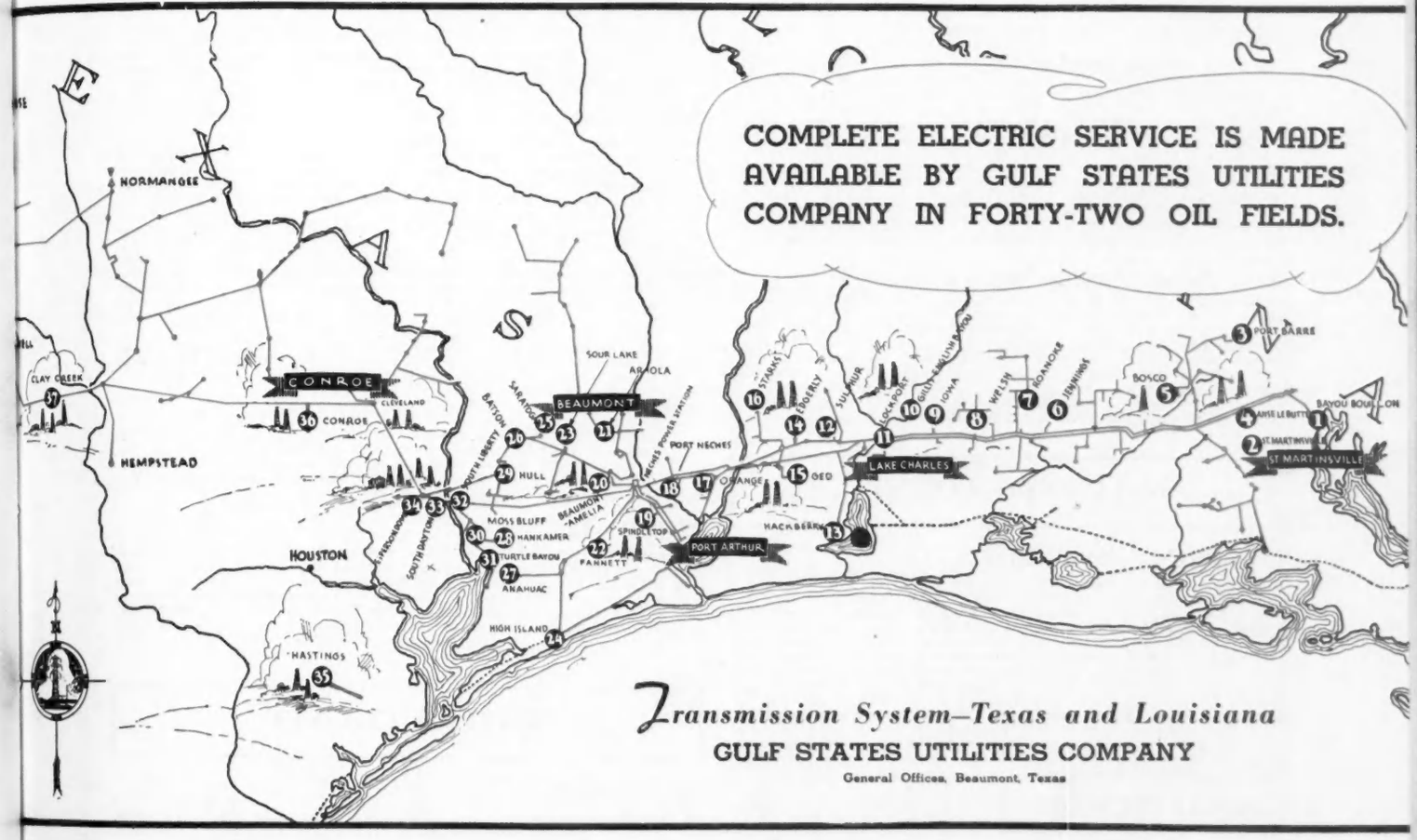
West and southwest Corrigan, centering around Trinity County School Land, Houston County School Land and Saner-Ragley Surveys. **Means of Discovery:** Pendulum, torsion balance, Gulf Production Co., 1933; Pure Oil Co. worked the general area. **Extent of Development:** Gulf drilled 5 dry holes on fee in Polk and Trinity counties. **Principal Leaseholders:** Gulf, J. T. Lightfoot. **Remarks:** Gulf acquired 5400 acres in se c Polk County (Segno), Oct., 1935, and has 20,000 acres Trinity County Lumber Co. fee under lease in Polk and Trinity counties. Lightfoot leased 8900 acres north of Corrigan, Oct., 1935. His L. Davidson 1 was abnd at 3137 ft, April, 1936. The block was taken on surface geology and geophysical work.

LIVINGSTON

Nine mi se Livingston, in se part Augustine Viesca 7 Leagues north of Jno. Swinney Survey. **Means of Discovery:** Surface and sub-surface geology; also torsion balance indications of deep dome. **Discovery Well:** Dick Schwab's Carlton-Davis 1, 20 million ft gas well, 4329-4311 ft, Oct. 18, 1932, yielding some distillate.

GULF STATES Serves the GULF COAST

Prior to 1911 electric power was untried and unproved in Gulf Coast oilfields. But in 1911, on a lease at Spindletop, an electric motor designed for other uses was crudely "hooked up" and put to work. Despite the makeshift equipment the experiment proved successful and from that day the use of central station power by the petroleum industry has increased steadily. Today Gulf States Utilities Company serves, (or has service in) 41 fields in Southeast Texas and Southwest Louisiana. A new 27,500 kw. generator was recently installed at Neches Station and transmission facilities are more than adequate to take care of increasing demands for power for pumping and other field uses, pipe line and refinery requirements in this area.



FIELDS THAT HAVE BEEN SERVED FOR FIVE YEARS OR LONGER

1 Bayou Bouillon	15 Ged	26 Batson
3 Port Barre	16 Starks	28 Hankamer
4 Anse La Butte	17 Orange	29 Hull
6 Jennings	18 Port Neches	30 Moss Bluff
8 Welsh	19 Spindletop	32 South Liberty
11 Lockport	22 Fannett	33 South Dayton
12 Sulphur	23 Sour Lake	34 Esperson Dome
13 Hackberry	24 High Island	35 Hastings
14 Edgerly	25 Saratoga	37 Clay Creek

RECENT DEVELOPMENT WHERE SERVICE IS AVAILABLE

2* St. Martinsville	27 Anahuac
5 Bosco	31* Turtle Bayou
7 Roanoke	36 Conroe
9 Iowa	Jefferson Island (La.)
10 Gillis-English Bayou	North Crowley
20 Beaumont-Amelia	* Abbeville
21* Ariola	* North Cheek
	* South Cheek

* Service within short distance.

covery well has produced oil out of over a half dozen tests drilled.

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A. Jordan, W. Wilson and surveys to west, 2½ mi s Deweyville. **Means of Discovery:** Surface indications, core drilling. **Extent of Development:** Humble Oil & Refining Co. drilled series cores to about 1000 ft. **Remarks:** Gulf Oil Corp. (5000 acres) and Sun Oil Co. (5000 acres) hold leases n of Deweyville.

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Northeast of Bunker Hill, centering H&TB Section 28. **Means of Discovery:** Reflection seismograph and torsion balance, Humble Oil & Refining Co., 1934 and 1935. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble. **Remarks:** Humble's leases run to 1941-1947; has taken additional acreage to east from Sabine Tram Co.

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Centering around Nancy Guthrie Survey. **Means of Discovery:** Torsion balance and reflection seismograph, Republic Production Co., 1936. **Principal Leaseholders:** Houston Oil Co. and Republic Production Co. **Remarks:** See Call, which was block "1" and also see Sabine Block "3" South Louisiana, Calcasieu Parish.

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Southeast of Call field and centering around D. Deark and E. Shoemaker Surveys. **Means of Discovery:** Reflection seismograph and torsion balance, Gulf Oil Corp., 1934 and 1935. **Extent of Development:** Undrilled. **Principal Leaseholder:** Gulf. **Remarks:** The leases extend in this area to the Sabine River and across into Louisiana. Some of the leases expire in 1939. This block joins Humble Oil & Refining Co.'s Northeast Bunker Hill prospect on the north.

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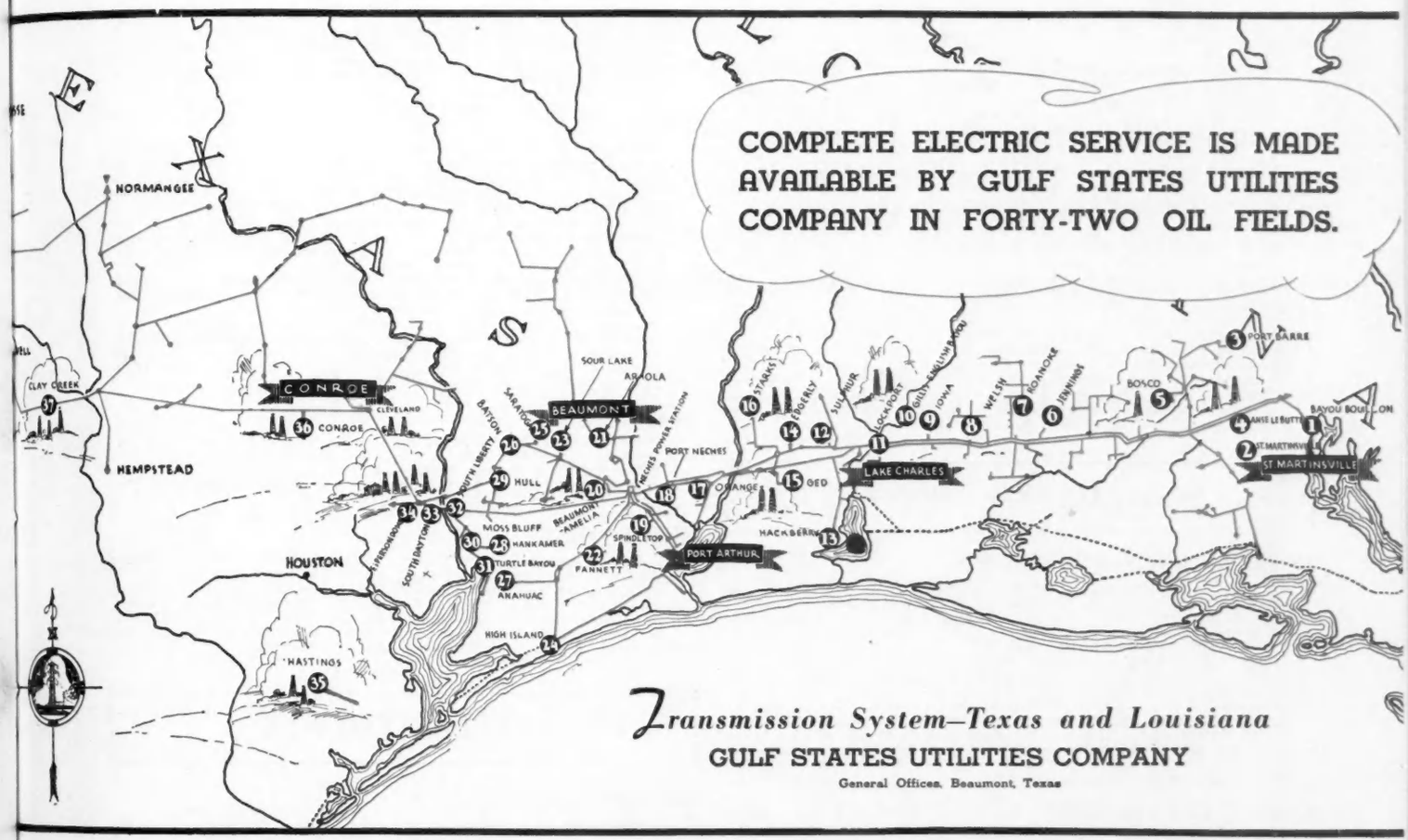

Transmission System—Texas and Louisiana

GULF STATES UTILITIES COMPANY

General Offices, Beaumont, Texas

FIELDS THAT HAVE BEEN SERVED FOR FIVE YEARS OR LONGER

1 Bayou Bouillon	15 Ged	26 Batson
3 Port Barre	16 Starks	28 Hankamer
4 Anse La Butte	17 Orange	29 Hull
6 Jennings	18 Port Neches	30 Moss Bluff
8 Welsh	19 Spindletop	32 South Liberty
11 Lockport	22 Fannett	33 South Dayton
12 Sulphur	23 Sour Lake	34 Esperson Dome
13 Hackberry	24 High Island	35 Hastings
14 Edgerly	25 Saratoga	37 Clay Creek

RECENT DEVELOPMENT WHERE SERVICE IS AVAILABLE

2* St. Martinsville	27 Anahuac
5 Bosco	31* Turtle Bayou
7 Roanoke	36 Conroe
9 Iowa	Jefferson Island (La.)
10 Gillis-English Bayou	North Crowley
20 Beaumont-Amelia	* Abbeville
21* Ariola	* North Cheek
	* South Cheek

* Service within short distance.

About 3 mi nw, in an isolated productive spot, first oil for the area was obtained from Sunshine Oil Co.'s Chase 2, which pumped 5 bbls 28 gravity oil daily at 3290 ft, Feb. 13, 1930; deepened to 3382 ft and pumped 15 bbls daily, beginning March 10, 1930. **Structure:** Dome of Raccoon Bend-Conroe type, but very small in area; no salt dome material reached. Faulted. **Producing Formations:** Main pay, Conroe sand of Cockfield age at 4195 to 4360 ft. Sunshine well production from Jackson sand at 3285-3382 ft. **Approximate Elevation:** 190-245 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 2100; 1600 developed. **Daily Production, July 1, 1938:** 1755 bbls. **Estimated Ultimate Recovery:** 15,750,000 bbls. **Production Through June, 1938:** 4,645,592 bbls. **Indicated Remaining Reserve:** 11,104,408 bbls. **Deepest Hole:** J. S. Abercrombie Co. and Harrison Oil Co.'s Carter Lumber Co. 1, s edge test, dry at 5596 ft, Feb., 1933, in Yegua. **Casing Programs:** Humble Oil & Refining Co., 10¾-in, 500 ft; 7-in, 4340 ft. Shell Petroleum Corp., 10¾-in, 600 ft; 7-in, 4300 ft. **Oil Outlet:** Shell Pipe Line Co., 6-in. **Range of Gravity:** 40. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Shell Petroleum Corp., Polk County Oil Co. (Josey & Schwab), Skelly Oil Co., Abercrombie & Harrison, Smith & McDaniels, Humble Oil & Refining Co., Hawkeye Petroleum Co., Gem Oil Co., Owenby Drilling Co., Refugio Oil Co., T. A. Carlton, Sun Oil Co. **Remarks:** One well is dr to each 20 acres. Each well is allowed to produce 2000 cu ft of gas per barrel of oil.

NORTHWEST SEGNO*

Northwest of Segno, centering J. G. Loving and H. W. Augustine Surveys. **Means of Discovery:** Geophysics, Humble Oil & Refining Co. **Extent of Development:** Mayo et al's Mayes 1, J. G. Loving Survey, dry 5101 ft, April, 1937. Humble's Carter 1, H. W. Augustine Survey, quit at 5012 ft, Aug., 1937. **Principal Leaseholder:** Humble.

ONALASKA*

Southeast of Onalaska, centering around J. Johnson and E. Clark Surveys. **Means of Discovery:** Subsurface and geophysics. **Extent of Development:** G. E. Gate's Jackson 1, dry 5557 ft, May, 1937. **Principal Leaseholder:** G. E. Gates.

SEGNO

Southeast of Segno, centering around I&GN Section 15, P. Garcia, A. Morales, M. Victor Surveys. **Means of Discovery:** Refraction seismograph and torsion balance, Gulf Oil Corp., Humble Oil & Refining Co., 1933, Kirby Petroleum Co. **Discovery Well:** J. K. Dorrance's S. Wing 1, 5194 ft, Dec. 24, 1936, 25 bbls 38 gr oil per hour through ¼-in choke. **Structure:** Anticline. **Approximate Elevation:** 145 to 165 ft. **Producing Formations:** Upper Cockfield sands at 5150 to 5195 ft and Conroe sands at 5243 to 5277 ft; 5340 to 5342 ft; Saline Bayou 6261-64 ft; Wilcox, 8163-68 ft. **Average Sand Thickness:** 12 ft. **Productive Acres:** 1000; 350 developed. **Daily Production, July 1, 1938:** 1772 bbls. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production Through June, 1938:** 788,606 bbls. **Indicated Remaining Reserve:** 9,211,394 bbls. **Deepest Hole:** Gulf's Regan 2, I&GN 15, topped sand showing oil 8100-8170 ft, set 5½-in csg 8266 ft, dr to 9154 ft, comp in new sand 8163-68 ft, April, 1938; top Wilcox 8100 ft. **Casing Programs:** J. K. Dorrance 10-in, 610 ft; 7-in, 5172 ft. Gulf Oil Corp., 10-in, 1033 ft; 5 or 7-in, 5180 and 5240 ft. La Quinta Oil Co., 7-in, 5180 and 5274 ft. **Oil Outlet:** Gulf Pipe Line Co., 6-in. **Gravity Oil:** 38-44. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** J. K. Dorrance, Humble, Gulf, La Quinta Oil Co., Rajo Oil Co. **Remarks:** Humble's Kirby Lumber Co. 3 extended the field 1½ mi se when a new sand was hit at 5340 ft, May, 1937. Spaced 10 acres; gas/oil ratio 2000/1. Second field in Gulf Coast to produce from Wilcox.

SAN JACINTO COUNTY

COLD SPRINGS–EVERGREEN

Six mi sw Cold Springs, centering George Taylor, Wm. Busby, J. Rankin Surveys. **Means of Discovery:** Surface geology, Stanolind Oil & Gas Co., 1937; geophysics, Shell Petroleum Corp., 1933. **Extent of Development:** Piedmont Oil Co.'s Foster Lumber Co. 1, nw c Geo. Taylor Survey, quit salt water, 4475 ft. Turnbull & Irwin's J. J. West 1, reported formations higher than above test, quit in Cockfield, 4280 ft. Phillips Petroleum Co.'s Foster Lumber Co. 1, ne c Geo. Taylor Survey, abnd 4500 ft, July, 1934. Ralph Stern's Love 1, 2 mi nw Cold Springs, D. McGee Survey, quit in salt water sand, 5670 ft, Jan., 1936. Gholson & Decker's Randolph 1, V. Flores Survey, dry 4175 ft. **Remarks:** Stern leased 5500 acres in Aug., 1934, and sold spreads to Humble Oil & Refining Co., Magnolia Petroleum Co., Sun Oil Co., Crown Central Petroleum Co., Sid Wheelis, Stanolind.

NORTH CLEVELAND*

Six mi n Cleveland, centering around I. Lowry, Wm. Dobie Surveys. **Means of Discovery:** Surface geology, geophysics. **Extent of Development:** Turnbull & Irwin's Foster Lumber Co. 1, Dobie Survey, quit in Cockfield salt water sand, 4936 ft, June, 1934. Three mi sw Weaver et al's Delta 1, J. W. Richardson Survey, quit at 5380 ft, April, 1933. Five mi ne, Seven Wells Corp.'s Foster 1, H. Alsbury Survey, quit in salt water sand, 5041 ft, 1932. **Remarks:** See Keno-Excelsior.

SECURITY*

Four mi n Security in San Jacinto and Montgomery counties, centering around s end G. Harris Survey. **Means of Discovery:** Subsurface geology, Shell Petroleum Corp., geophysics, 1933. **Extent of Development:** Turnbull & Irwin's Aylor 1, E. Votaw Eurvey, quit in salt water sand, 5230 ft, 1933, Fitzgerald 1, G. H. Harris Survey, quit in Cockfield, 4852 ft, 1934. J. M. Weaver et al's Delta 1, J. G. Ferguson Survey, abnd 5752 ft, 1934. Turnbull & Irwin's Love 1, Washington County Survey No. 4, quit in Cockfield salt water, 4720 ft, 1933.

*Prospect. †Salt dome, no production. ‡Gas field.

SHEPHERD*

Four mi e Shepherd, L. D. Martinez Nos. 3 and 4, F. Hardin, C. Smith Surveys. **Means of Discovery:** Geophysics, Shell Petroleum Corp., 1933; torsion balance, Atlantic Oil Producing Co., Shell, 1934. **Extent of Development:** Turnbull & Irwin's Peoples State Bank 1, salt water 4633-50 ft, abnd 4650 ft, 1934; Moore 1, salt water sand 4850-67 ft, dry 4873 ft. H. C. Cockburn's Lankin 1, Wm. Hayes Survey, quit in Cockfield salt water sand, 5319 ft, Nov., 1935; Dickson-Falvey-Shell 1, C. Smith Survey, quit in salt water sand, 5005 ft, Jan., 1936; K. Moore 1, quit at 5053 ft, Feb., 1936.

STALEY*

Six mi ne Oakhurst, centering around the L. Enriques Survey. **Means of Discovery:** Core hole drilling by J. Mayo et al, 1937. **Extent of Development:** Number of core hole tests of which J. Mayo et al's Gibbs 1, blew out at 1350 ft, showed 200 lbs and salt water. Top sand 1333 ft, dr to 1848 ft, abnd, Oct., 1937. J. W. Oliphant et al's Gibbs Bros. 1, C. McKni Survey, abnd 6004 ft, June, 1938.

TYLER COUNTY

COLMESNEIL*

Three mi n Colmesneil, S. L. Ghohm Survey. **Means of Discovery:** Surface geology, Pure Oil Co., 1933. **Extent of Development:** Boone Bros.' Crews 1, show of oil, 1961-65 ft, salt water sand 2231-34 ft, dry 3026 ft, Aug., 1934. **Principal Leaseholders:** Boone Bros., Pure Oil Co. Stanolind Oil & Gas Co. has a large block (was Yount-Lee) south of this prospect.

NORTHEAST WOODVILLE*

Nine mi ne of Woodville, centering around A. Barclay Survey. **Means of Discovery:** Reflection seismograph and gravitometer, 1936-1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Gulf Oil Corp.

SPURGER

Southeast of Spurger gas field, centering around the N. Hurd Survey. **Means of Discovery:** Reflection seismograph and torsion balance, Republic Production Co. and Houston Oil Co. **Discovery Well:** Republic Production Co. and Houston Oil Co.'s Hurd 2, May 2, 1937, 300 bbls daily, 43 gr oil through ¼-in choke at 7641 ft. Potential test showed 17 bbls per hour. **Type Structure:** Dome. **Approximate Elevation:** 50-70 ft. **Producing Formation:** Wilcox formation 7621-41 ft; 7665-7711 ft. **Productive Acres:** 600; 200 developed. **Daily Production, July 1, 1938:** 715 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 190,551 bbls. **Indicated Remaining Reserve:** 4,809,449 bbls. **Deepest Hole:** Republic's Hurd 5, dr to 8180 ft; pb and perforated 7697-7711 ft, comp Nov., 1937. **Casing Program:** Republic, 16-in, 44 ft; 10-in, 2331 ft; 7-in, 7632 ft. **Oil Outlet:** American Pet. Co., 6-in. **Gravity Oil:** 43-45. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Republic and Houston Oil Co. **Remarks:** First field in Gulf Coast to produce from Wilcox formation.

WARREN*

South of Hillister, centering around B.B.B.&C. Sections 8 and 11. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1933. **Extent of Development:** Navarro Oil Co.'s Rice 1, abnd 5188 ft, Jan., 1938. **Principal Leaseholders:** Humble, The Texas Co., Sun Oil Co., Navarro Oil Co.

WOODVILLE*

South of Woodville, centering around J. Wheat Survey. **Means of Discovery:** Surface geology, torsion balance, Jaybee Oil Co., 1934. **Extent of Development:** Jaybee Oil Co.'s Young 1, abnd salt water sand, 4050 ft, Sept., 1934. **Principal Leaseholders:** Jaybee Oil Co., Woodley Petroleum Co., Gulf Oil Corp. **Remarks:** Sinclair Prairie Oil Co., Atlantic Oil Producing Co., Humble Oil & Refining Co., contributed toward drilling test.

WALLER COUNTY

HEMPSTEAD*

Surrounding Hempstead, J. Mouser, C. M. Donohue, S. Hardin Surveys. **Means of Discovery:** Surface indications; reflection seismograph, Shell Petroleum Corp., 1933. **Extent of Development:** H. E. Williams' Giddings 1, J. Mouser Survey, salt water sand 3977 to 3991 ft, dry 4408 ft, March, 1937. Sumas Prod. Co.'s Menke 1, Donohue Survey, salt water sand in Cockfield, dry 5095 ft, March, 1937. Red Bank Oil Co.'s Chapman 1, S. Hardin Survey, quit at 4758 ft, April, 1937.

KATY‡

Five mi w of Katy, centering M. Bennett, T. S. Reese Sec 110; H.&T.C. Sec 99, Surveys. **Means of Discovery:** Reflection seismograph, Stanolind Oil & Gas Co., Humble Oil & Refining Co., 1934. Several other major oil companies worked this area with geophysical instruments. **Discovery Well:** Stanolind Oil & Gas Co.'s Thorp 1, 2,000,000 cu ft gas daily on various size chokes with 50 to 75 bbls of 58 gr distillate, Feb. 15, 1935. Drilled to 7663 ft, Crockett, pb to 7466 ft. **Structure:** Gas cap type anticline. Thought to be as large a structure as Conroe. Possibilities of oil around the flanks. **Producing Formations:** Discovery well encountered showings in the Cockfield and Upper Saline Bayou sands. Below the top of Cockfield, Thorp 1 encountered over 102 ft gas sand.

First showing was at base of Caddell and continued through Cockfield to top of Upper Saline Bayou. Second well had broken formations showing gas from 7253 to 7500 ft. **Approximate Elevation:** 160-180 ft. **Average Sand Thickness:** Several hundred ft of broken formation showing distillate. **Productive Acres:** Large area for gas. **Daily Production, July 1, 1938:** Gas. **Estimated Ultimate Recovery:** Gas. **Production Through June, 1938:** Gas. **Indicated Remaining Reserve:** Gas. **Deepest Hole:** Stanolind et al's Freeman 1, topped Wilcox 10,025 ft, dr broken shows of gas to 10,635 ft, dr July, 1938. **Casing Programs:** Stanolind, 16-in, 146 ft; 10-in, 2481 ft; 7-in, 7295 ft. **Oil Outlet:** Wells shut in. **Gravity Oil:** 58. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** The discovery well was drilled on a unitized block. Humble Oil & Refining Co., Stanolind Oil & Gas Co., Sinclair Prairie Oil Co., Amerada Petroleum Corp. and Tide Water-Darby Petroleum Co. **Remarks:** The first well on the Conroe trend to drill 1489 ft in Cockfield formation without encountering salt water. The discovery well is the deepest well along trend to show gas. Opened a new producing zone for the trend. Amerada-Stanolind's Mary Manor 1, 7½ mi n of the discovery well is located on the same structure and is classed by many as the discovery well for the field. The well made 15,000,000 cu ft of gas on a drill stem test but showed salt water.

SAN FELIPE

John McFarland Survey. **Means of Discovery:** Seismograph reflection, Gulf Production Co., 1927. **Discovery Well:** Seaport Oil Co.'s Vaughn 1, Sept. 7, 1934, pumped four to five bbls per hour, 2966 ft. It was drilled 10 ft deeper, 2976 ft, flowed 22.2 gravity oil through the drill stem Oct. 9, 1934, at the rate of 8 bbls per hour, 50 percent oil, 50 percent fresh water. **Structure:** Salt dome. One well topped cap rock at 3218 ft, and a s flank test hit salt at 4755 ft. **Producing Formations:** Producing from the Frio formation of the Oligocene in sandy shale, 385 ft, below the top of the Frio formation and 228 ft above cap rock. Sands 2966-2976 ft. **Productive Acres:** Only the discovery well. **Daily Production, July 1, 1938:** 9 bbls. **Estimated Ultimate Recovery:** 100,000 bbls. **Production Through June, 1938:** 20,929 bbls. **Indicated Remaining Reserve:** 79,071 bbls. **Deepest Hole:** Empire Gas & Fuel Co.'s Kunze 1, w flank, dry at 7200 ft, 1931. **Casing Programs:** Capps & Sloane, 10-in, 602 ft; 7-in, 2954 ft. **Oil Outlet:** Tank cars. **Range of Gravity:** 23. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Humble Oil & Refining Co., Seaport Oil Co., The Texas Co., Gulf Production Co., Empire Gas & Fuel Co. **Remarks:** Regarded as one of the largest salt domes on the Texas Gulf Coast. Few wells have drilled deep enough for geological determinations. Sometimes referred to as Brookshire.

WALLER*

Nine mi ne Waller, J. H. Stephens, B.B.B.&C. 97, Pevehouse, J. Cooper, D. O'Boyle, G. Clay, Stewart, L. H. Jones Survey. **Means of Discovery:** Surface indications, torsion balance, seismograph reflection, Shell Petroleum Corp., 1935. **Extent of Development:** Humble's Taub 1, B.B.B.&C. Section 97, abnd shale, 1025 ft, 1930. Diadem Oil Co.'s Urban 1, salt water sand 4762-84 ft, dry 4905 ft, in Cockfield, June, 1935. J. Bryan Eby's Wm. Rice 1, J. Stephens Survey, salt water sands 4629-44 ft, encountered Cook Mountain and was abnd 7813 ft, Dec., 1937. **Principal Leaseholder:** Shell.

*Prospect. †Salt dome, no production. ‡Gas field.

WASHINGTON COUNTY

BRENHAM

S. M. Williams and J. Hodges Surveys, 8 mi sw Brenham. **Means of Discovery:** Surface elevation, gas seeps. **Discovery Well:** Brenham Oil Co.'s Schurenberg 2, Oct. 8, 1915, 25 bbls, 1450 ft. (First shallow oil production: Lamarque Oil Co.'s Hess 1, 30 bbls. 270 ft, Jan. 9, 1925.) **Structure:** Salt dome, top cap rock 800 ft, salt 1150 ft. **Producing Formations:** Miocene sands at 190 to 482 ft; sands at 1500 ft. **Approximate Elevation:** 400-420 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 50. **Daily Production, July 1, 1938:** 25 bbls. **Estimated Ultimate Recovery:** 500,000 bbls. **Production Through June, 1938:** 356,005 bbls. **Indicated Remaining Reserve:** 143,995 bbls. **Deepest Hole:** Sun Oil Co.'s Zetik 1, dry 3350 ft in Cockfield, June, 1934, tested fresh water. **Oil Outlet:** Trucks. **Range of Gravity:** 14-19. **Rigs Running, July 1, 1938:** One (sulphur test). **Principal Leaseholders:** Butler and Calhoun, Conklin et al, Golden Rule Oil Co., Lynne Oil Co., Virginia Oil Co. **Remarks:** Located farther inland than regular salt domes.

CLAY CREEK

12 mi n Brenham, Nestor Clay and J. F. Perry Surveys. **Means of Discovery:** Surface geology of Sun Oil Co., 1926, and core tests. **Discovery Well:** Sun's G. F. Grote 1, 125 bbls, 25 gravity, 1154 ft, Oct. 10, 1928. **Structure:** Salt dome, top cap rock 1800 ft, salt 3160 ft. **Producing Formations:** Miocene, Cockfield, Mount Selman, and Wilcox sands at 1124 to 1500 ft. **Approximate Elevation:** 275-295 ft. **Average Sand Thickness:** 120 ft. **Productive Acres:** 350. **Daily Production, July 1, 1938:** 489 bbls. **Estimated Ultimate Recovery:** 5,500,000 bbls. **Production Through June, 1938:** 4,049,702 bbls. **Indicated Remaining Reserve:** 1,450,298 bbls. **Deepest Hole:** Sun Oil Co.'s Lauter 1, se flank test, dr 8306 ft in salt, top 8240 ft, pb and made a series of tests and was abnd April, 1937. The well tested Wilcox formation. **Casing Programs:** Sun Oil Co., 10-in, 100 to 200 ft; 7-in, 1100 to 1330 ft. Oak Oil Co., 10¾-in, 101 ft; 7-in, 1354 ft. **Oil Outlet:** Sun Pipe Line Co. to loading rack. **Range of Gravity:** 22-27. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** Sun Oil Co. **Remarks:** Wilcox formation in Gulf Coast is known only in this field.

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Gulf Building **Houston**

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

WHARTON COUNTY

BLUE BASIN†

One and one half mi se of Pierce, centering around J. Hyland Survey. **Means of Discovery:** Torsion balance, reflection seismograph, Pure Oil Co. and The Texas Co., 1932. **Discovery Well:** The Texas Co.'s Kluck 1, April 4, 1937, 500,000 cu ft gas after perforating 4642 to 4657 ft. **Type Structure:** Dome like Withers, Five Corners, and Magnet. **Producing Formations:** Miocene sands at 4642 4657 ft. **Average Sand Thickness:** 20 ft (gas sand). **Productive Acres:** Only the discovery well. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** Gas. **Production Through June, 1938:** Gas. **Indicated Remaining Reserve:** Gas. **Deepest Hole:** Pure Oil Co.'s Page 1, dr to 9200 ft in heaving shale, set 6⅝-in, 8500 ft, tested up the hole, finally abn 7850 ft, June, 1936. **Casing Programs:** The Texas Co., 10¾-in, 1348 ft; 5-in, 4718 ft. **Oil Outlet:** Gas. **Gravity Oil:** Gas. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Pure Oil Co., The Texas Co. **Remarks:** Pure Oil Co. farmed out acreage to Texas to drill the gas well. Pure has around 8000 acres in this area and drilled several dry holes surrounding the discovery well. **Heaving Shale:** Is found under the Paige, Borden, Duffy and Schult tracts in the Vicksburg formation. Top of heave is usually encountered around 8092 ft. Over 1108 ft of the formation has been penetrated.

BOLING

Two mi e Boling. S. F. Austin 3-1/6 Lg., D. W. Anthony, Simon Miller and Jas. Scott surveys. **Means of Discovery:** Gas, sulphur water. **Discovery Well:** The Texas Co.'s Taylor 3, Dec. 14, 1925, 10,000 bbls, 3338 ft. **Structure:** Salt dome, top of cap rock 425 ft, salt 975 ft. **Producing Formations:** Cap rock at 377 to 500 ft; Oligocene sands at 2500 to 4089 ft, Frio sands at 4281 ft, and 4817-4859 ft. Also sulphur from cap. **Approximate Elevation:** 70-85 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 225; 200 developed. **Daily Production, July 1, 1938:** 1341 bbls. **Estimated Ultimate Recovery:** 8,000,000 bbls. **Production Through June, 1938:** 5,887,205 bbls. **Indicated Remaining Reserve:** 2,112,795 bbls. **Deepest Hole:** Allied Minerals Corp.'s E. C. Farmer 1, se flank, quit at 5543 ft in Frio, April, 1935. **Casing Programs:** The Texas Co., 10-in, 769 ft; 6⅝-in, 3397 ft. Mack Hank Oil Co., 10-in, 1000 ft; 7-in, 4500 to 4800 ft. Sun Oil Co., 10-in, 970 ft; 7-in, 4079 ft. **Oil Outlets:** Sinclair Prairie Pipe Line Co., 8-in; Humble Pipe Line Co., 8-in. **Range of Gravity:** 19-33. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Gulf Oil Corp., The Texas Co., Margnolia Petroleum Co., Weed-Gayle Oil Co., Sun Oil Co., Atlantic Oil Producing Co., Humble Oil & Refining Co., Boling Dome Oil Corp., Sinclair Prairie Oil Co., Allied Minerals Corp., Texas-New York Development Co., Navarro Oil Co., Hank & Mack Oil Co., Brewster Tr. **Remarks:** Referred to as Newgulf. During 1936-37, Mack Hank Oil Co. developed the Frio oil on e flank of field. **Heaving Shale:** Is found under Dipple, Farmer, and Fields tracts in Oligocene formation. Top of heave is around 4255 ft and 4880 ft.

EAST BERNARD*

Northeast corner Wharton County, centering J. Scott Survey. **Means of Discovery:** Reflection seismograph, Tide Water Oil Co., 1934. **Structure:** Probably deep-seated salt dome. **Extent of Development:** Sterling Oil & Refining Co.,'s Janek 1, small shows of oil and gas with salt water flow, abnd 8667 ft, in Cook Mountain, Dec., 1935. Same operator's Genzer 1, dry at 7871 ft in Cook Mountain, June, 1936. **Principal Leaseholders:** Tide Water Oil Co., Sterling, Gulf Oil Corp., Kirby Petroleum Co., C. E. Bunte. **Remarks:** Sometimes referred to as O'Connor dome.

EGYPT*

East of Egypt, centering A. Edgar Survey. **Means of Discovery:** Geophysics, Humble Oil & Refining Co. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble.

FIVE CORNERS

West of Withers field, centering around J. Hyland, A. H. Pierce, J. Caldwell and J. Hyland surveys. **Means of Discovery:** Torsion balance and reflection seismograph, The Texas Co., 1934-1935. **Discovery Well:** The Texas Co.'s Pierce Estate B-1, June 11, 1936, 2,000,000 cu ft gas daily at 5520 ft. First commercial oil well was The Texas Co.'s Pierce Estate B-5, Jan. 20, 1937, 80 bbls 25.3 gravity oil daily, 5553 ft. **Type Structure:** Faulted salt dome. **Approximate Elevation:** 75-95 ft. **Producing Formations:** Frio sands of Oligocene, 5530 to 5570 ft. **Average Sand Thickness:** 50 ft. **Productive Acres:** Included with Withers. **Daily Production, July 1, 1938:** Included with Withers. **Estimated Ultimate Recovery:** Included with Withers. **Production Through June, 1938:** Included with Withers. **Deepest Hole:** Pierce Estate B-1, discovery well, dr to 6511 ft, pb. **Casing Programs:** 16-in, 40 ft; 10-in, 1100 to 1200 ft; 7-in, 5540 ft. **Oil Outlet:** The Texas Pipe Line Co., 6-in. **Gravity Oil:** 25.6. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** The Texas Co. **Remarks:** Third field for The Texas Co. to discover on Pierce Estate property. Five Corners was considered a part of Withers field but is cut from the producing territory by a fault. (See Withers, Blue Basin, Magnet, and Pickett Ridge.)

GLENFLORA*

Two mi sw Glenflora, Wm. Kinchelor Survey. **Means of Discovery:** Surface indications. **Extent of Development:** Daniels Bros.' Dayvault 1, Kinchelor Survey, abnd 6300 ft, Sept., 1933.

HILJE–EL CAMPO*

Three mi se Hilje, E. T. R. R. Sections 26, 27, 37, 38. J. M. Morford Survey. **Means of Discovery:** Surface indications; torsion balance. Cockburn Oil Corp., 1929. **Extent of Development:** Several shallow tests. Bennett Petroleum Corp.'s Bard 1 quit in Frio at 5558 ft, Nov., 1936. Salt water sand 5365-5383 ft. Sam G. Harrison's Byerly 1, salt water sand 4591-5358 ft, abnd March, 1937.

HUNGERFORD*

North of Hungerford, Alexander Jackson Survey. **Means of Discovery:** Surface indications; torsion balance, Gulf Production Co., 1931; checked by reflection seismograph. **Extent of Development:** H. H. Givan et al, three tests on Hudgins land, 850, 1350 and 3025 ft, 1930-31. Cullen & West's Hudgins 1, Jackson Survey, dry, 5768 ft, 1932; Hawes 1, G. W. Singleton Survey, dry, 6850 ft, 1933. Cockburn & Hargrove's Hudgins 1, M. Muldoon Survey, salt water sand in Frio, quit at 7530 ft, March, 1938.

LAKEVIEW†

Three and half mi n of El Campo and 6 mi n of Pickett Ridge field, centering around H. & T. C. Section 8. **Means of Discovery:** Surface geology. **Discovery Well:** Smith & McDannald's Mitchell 1, 6875 ft, pb 3283 ft, perforated csg 3185 to 3199 ft, 20 shots, made 2,700,000 cu ft gas daily, May 1, 1936. **Type Structure:** Nonpiercement type salt dome. **Approximate Elevation:** 124 ft. **Producing Formations:** Catahoula of Oligocene 3185 to 3199 ft. **Average Sand Thickness:** Gas. **Productive Acres:** Gas. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** Gas. **Production Through June, 1938:** Gas. **Deepest Hole:** Smith & McDannald's Ridgway 1, dr to 7607 ft; abn, Oct., 1933. **Casing Programs:** Smith & McDannald, 10-in, 965 ft; 7-in, 6279 ft. **Oil Outlet:** Gas. **Gravity Oil:** Gas. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Smith & McDannald, Shell Petroleum Corp. **Remarks:** Was called North El Campo prospect in 1936 Gulf Coast issue. **Heaving Shale:** Is found under Ridgeway and Krasta tracts in Yegua formation. Top of heave is usually encountered around 6600 to 6800 ft.

LEACH*

Four one half mi s Hilje, E. T. R. R. Sections 58 and 73; L. P. Ogden. **Means of Discovery:** Gas seeps and surface high; torsion balance and reflection seismograph, Cockburn Oil Corp., 1931; checked torsion balance, Texas Gulf Producing Co. **Extent of Development:** Two 1200-foot tests, no showings; 1600-ft test stopped in sand which showed some gas and oil. Steed Production Co.'s Lurker 1, Section 58, abnd 5026 ft, 1934. Texas Gulf Producing Co.'s Kresta 1, quit in heaving shale, 6909 ft, 1934. Cockburn Oil Corp.'s T. Connor 1, dr salt water sand 5295 to 5945 ft and quit in Frio formation at 6020 ft, March, 1936. The Texas Co.'s Weatherer 1, E. T. Section 100, showed salt water 5204 ft to 6524 ft, in Frio, abnd March, 1937; Johnson 1, J. Bognal Survey, dry at 5401 ft, Dec., 1937.

LISSIE*

Three mi s of Lissie, centering L. P. Jennings and G. H. & H. surveys. **Means of Discovery:** Reflection seismograph and torsion balance, Sun Oil Co., 1934. Several other major oil companies have worked in the area with geophysical instruments. **Extent of Development:** Strake Petroleum Co.'s Strunk 1, cored sands showing oil at 6742 to 6763 feet and from 6918 to 6949 ft, slight odor of gas at 9446 ft, and no Wilcox at 9500 ft, abn 9500 ft, Feb., 1938. Poole 1, dry 7012 ft, April, 1938. **Principal Leaseholders:** Strake Petroleum Co., Sun Oil Co., The Texas Co.

LOUISE

Three mi se Louise. Morris & Cummings Survey, Sections 19, 22, 23, 25, 27, 28, 29 and F. Walnut, T. W. Hurd, J. M. Brownson surveys. **Means of Discovery:** Refraction seismograph, Pure Oil Co., 1928. **Discovery Well:** Pure's Stewart 1, Section 25, drilled to 8015 ft, plugged back, and completed at 5976-5983 ft, Dec. 14, 1933, flowing 262 bbls 38 gravity oil daily through ½-in choke, production being from Frio sand. **Structure:** Deep seated dome. No direct evidence of salt or cap rock in connection with the structure, either through drilling or geophysics. **Producing Formations:** Marginulina sand of middle Oligocene at 5135-5185 ft; Frio sands of Oligocene at 5976-5983 ft, 6431-6445 ft, and at 7143 ft. **Approximate Elevation:** 75-95 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 1500. **Daily Production, July 1, 1938:** 1205 bbls. **Estimated Ultimate Recovery:** 5,500,000 bbls. **Production Through June, 1938:** 1,989,998 bbls. **Indicated Remaining Reserve:** 3,510,002 bbls. **Deepest Hole:** Pure's Stewart 2, drilled to 8271 ft in Frio, Dec., 1934, pb and comp as a producer, March, 1935; tested at 8266 ft. **Casing Programs:** Pure Oil Co., 16½- or 18⅝-in, 60 ft; 9-, 10- or 13¾-in, from 900 to 1194 ft; 5- or 7-in, 5110 to 5166 ft. **Oil Outlet:** Texas Pipe Line Co., 4-in. **Range of Gravity:** 26-38. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** Pure Oil Co. **Heaving Shale:** Is found.

MACKEY*

Southeast of Mackey centering around Borden Estate. **Means of Discovery:** Reflection seismograph and torsion balance, Magnolia Petroleum Corp., 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Magnolia.

MAGNET

Southeast of Withers centering Smith & McKenzie and J. Castleman surveys. **Means of Discovery:** Torsion balance, H. C. Cockburn, 1931. Later checked by reflection seismograph. **Discovery Well:** Cockburn Oil Corp.'s Fee 1, Sept. 4, 1936, 4 bbls fluid per hour, later killed and completed for 120 bbls daily, 5521-60 ft. **Type Structure:** Dome. **Approximate Elevation:** 60-90 ft. **Producing Formations:** Marginulina-Frio sands 5490 to 5560 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 1000; 500 developed. **Daily Production, July 1, 1938:** 755 bbls. **Estimated Ultimate Recovery:** 9,000,000 bbls. **Production Through June, 1938:** 291,004 bbls. **Indicated Remaining Reserve:** 8,708,996 bbls. **Deepest Hole:** C. E. McDonald's Sweet 1, salt water sands at 5854 ft, abn Jan., 1937. **Casing Programs:** Texas Crusader Oil Co., 10-in, 1126 ft; 7-in, 5534 ft. Atlantic Refining Co., 10-in, 1248 ft; 7-in, 5532 ft. **Oil Outlet:** Texas Pipe Line Co., 6-in. **Gravity Oil:** 25.5. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** H. C.

*Prospect. †Salt dome, no production. ‡Gas field.

Why a SIEVERS REAMED HOLE Stays REAMED!

A graphic illustration of the sound engineering behind the Sievers Reamer. Turn this photo to the right and see how it applies to the WALLS *of your well. The Sievers cutting principle (right) actually removes excess formation by shearing it* UPWARDLY *into the circulating stream. The correct cutting angle which it incorporates causes a slight downward thrust that aids the action of the bit.*

Take a good look at this illustration. It explains how you can be sure of *positive* reaming efficiency in your well!

The photo shows two wheels rolling along the ground. The one on the left is rolling straight. The one on the right is held at a slight angle as it rolls. Now here's the question:

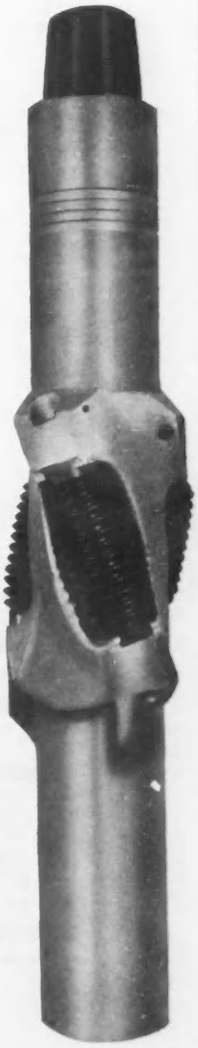
Which wheel merely presses a groove into the surface without actually displacing any of the material? Correct—the one on the left.

Now, which wheel actually cuts a *permanent* groove into the surface, shoving the displaced material off to one side? Naturally, the one on the right.

And that, in a nutshell, explains the positive efficiency of the Sievers Reamer. Each Sievers Cutter is actually *a series of knife-edged discs* forced to shear across the walls of the hole *by the engineered angle* at which the cutters are placed. The Sievers Reamer does NOT roll the formation *into* the walls where it can swell out again after the reamer has passed through. Instead, it actually slices the excess formation *away* from the walls, smoothly and *permanently*, pushing it up into the circulating stream where it is quickly carried out of the hole.

That's why when you ream your well with a Sievers Reamer it *stays* reamed—always full-gauged and round. You can run a fresh bit to bottom with minimum redrilling... you can come out of the hole *fast* without "hanging up"... and you can run long strings of casing *safely* even with small wall clearances.

Every time you run a Sievers Reamer you save time and you save money because you get a PERMANENT reaming job!



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MANCHA*

Nine mi nw El Campo, N. Mancha Survey. **Means of Discovery:** Surface indications; torsion balance, seismograph, Stanolind Oil & Gas Co., Houston Oil Co., 1931. **Extent of Deveolpment:** The Texas Co. drilled several tests, deepest 1600 ft. Gant & Teas' Hahn 1, Mancha Survey, had gas show, 1475-96 ft, and 3328-44 ft, abnd Vicksburg, 5550 ft, 1932. Navarro Oil Co.'s E. P. Schoelman 1, quit at 7732 ft, Oct., 1935.

NORTH LOUISE*

North of Louise field centering the J. J. Dillard Survey. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1937. **Extent of Development:** Shell's A. Steves 1, abn Sept., 1937, 7362 ft. **Principal Leaseholders:** Shell, Skelly Oil Co., Felmont Oil Co.

PICKETT RIDGE–KUBELA

One mi se of Pierce, centering I. & G. N. Sections 24, 37, 38, 39 and 76, J. Telfarner, Section 2, H. & T. C. Abst 129, G. W. Reynolds, G. Gilford surveys. **Means of Discovery:** Torsion balance, seismograph reflection, The Texas Co., 1934. Surface and subsurface geology. **Discovery Well:** The Texas Co.'s Pierce Estate A-2, 12 bbls 23.9 gravity oil per hour from 4704 ft, June 24, 1935. Later killed due to high gas/oil ratio. Drilled to 4710 ft, came in for 16 bbls per hour, July 9, 1935. **Structure:** Nosing. **Producing Formations:** Frio formation of the Oligocene series from 4596 to 4719 ft. **Approximate Elevation:** 90-110 ft. **Average Sand Thickness:** 10-25 ft. **Productive Acres:** 1200; 700 developed. **Daily Production, July 1, 1938:** 1894 bbls. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production Through June, 1938:** 1,689,291 bbls. **Indicated Remaining Reserve:** 8,310,709 bbls. **Deepest Hole:** The Texas Co.'s Pierce Estate A-33, se flank test, abn 8888 ft, Sept., 1937. **Casing Programs:** Texas Co., 16-in, 31 ft; 10-in, 1120 ft; 7-in, 4580 ft. **Oil Outlet:** Texas Pipe Line Co., 6-in. **Range of Gravity:** 22-25.7. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** The Texas Co., Rio Bravo Oil Co., Texas Crusader Oil Co., Great Plains Oil Co., Tide Water Associated Oil Co. **Remarks:** One well is dr to each 20 acres. Texas Crusader Oil Co.'s Koubela 1, 8000 ft, w of Pickett Ridge came in Nov., 1936. Some say it is a new field.

RIO*

Seven mi n Hilje, W. C. R. R. Sections 42, 43, 44. L. Conkrite. **Means of Discovery:** Geophysics, Humble Oil & Refining Co., Rio Bravo Oil Co., Shell Petroleum Corp. **Extent of Development:** Sam G. Harrison's Harfast 1, L. Conkrite Survey, dry at 5018 ft, May, 1937. **Principal Leaseholders:** Humble, Shell. **Remarks:** Most of leases in area have been surrendered since dry hole was drilled.

*Prospect. †Salt dome, no production. ‡Gas field.

SOUTHEAST WHARTON*

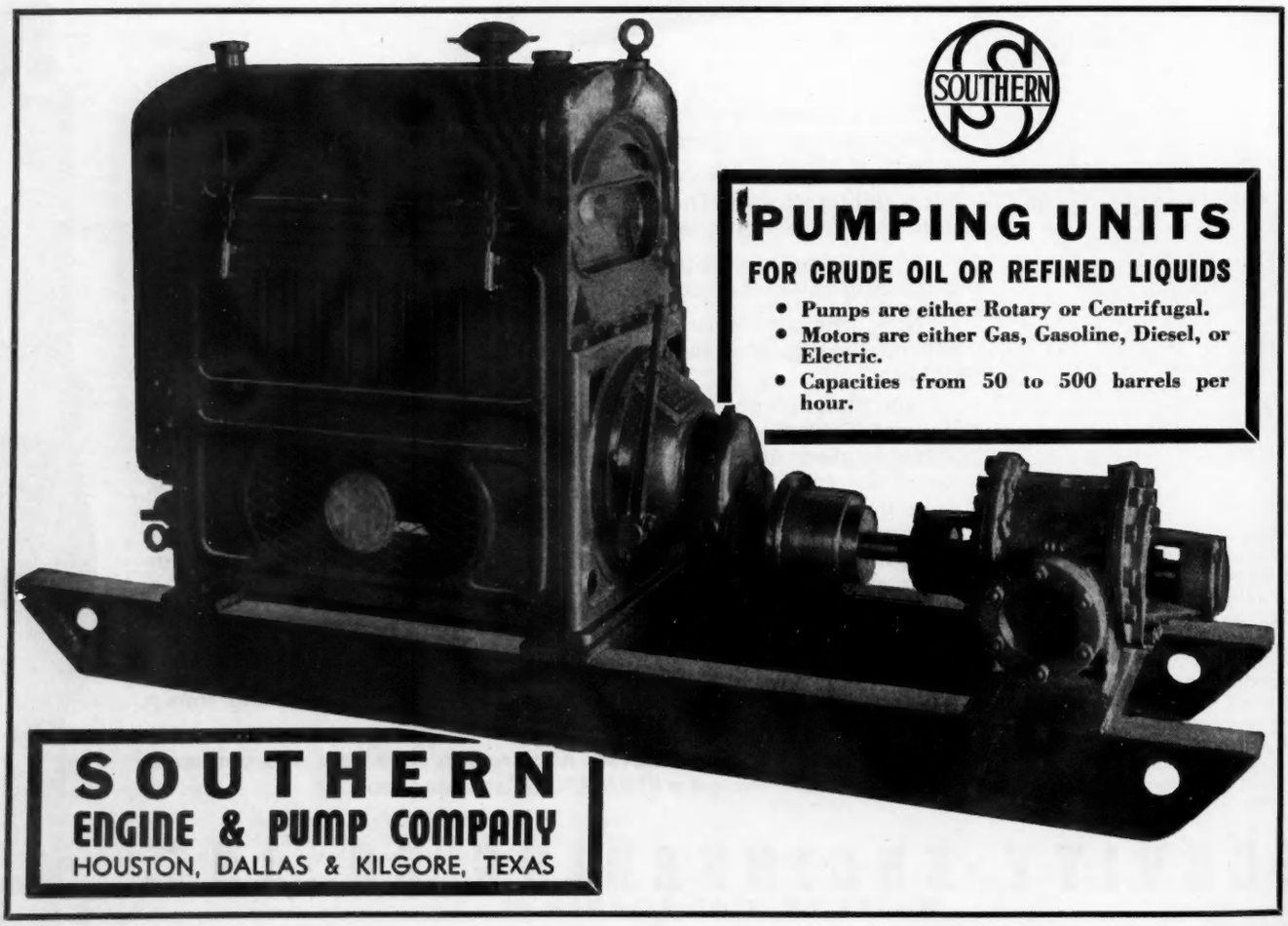
Three mi se Wharton, F. Biggam and J. Tumblinson surveys. **Means of Discovery:** Reflection seismograph and torsion balance, Shell Petroleum Corp. **Extent of Development:** Hutchinson & Dickson's Reid 1, Biggam Survey, abnd 6600 ft, 1934. Shell's Seyler 1, quit at 5715 ft in Frio, Dec., 1936. J. F. Hutchin's Wensley 1, J. Tumblinson Survey, dry at 5472 ft, April, 1937; Orsak 1, dry 3080 ft, August, 1937. **Principal Leaseholder:** Shell.

SPANISH CAMP†

East of Spanish Camp, centering around D. Wade and S. F. Austin Nos. 1 and 3. **Means of Discovery:** Reflection seismograph, and torsion balance, Felmont Oil Corp., 1934. Geophysics, Humble Oil & Refining Co., The Texas Co., and Standard Oil Co. of Kansas, 1934. **Discovery Well:** Felmont Oil Corp.'s General Mitchell 1, D. Wade Survey, Dec. 15, 1936, 4,000,000 cu ft of gas with a small amount of distillate through ¼-in choke, 3015 ft. **Type Structure:** Believed to be nosing. **Producing Formations:** Miocene sands at 2910 to 3020 ft. **Productive Acres:** Only gas. **Daily Production, July 1, 1938:** Gas. **Production Through June, 1938:** Gas. **Deepest Hole:** Albert Plummer's L. Logue 1, blew out at 6510 ft, salt water sands 8159-69 ft, pb 3070 ft, comp gas well, March, 1937. **Casing Programs:** Felmont Oil Corp., 10-in, 1282 ft; 7-in, 3015 ft. **Oil Outlet:** None. **Gravity Oil:** Gas. **Rigs Running, July, 1938:** One. **Principal Leaseholders:** Felmont Oil Corp., Albert Plummer, Humble Oil & Refining Co., Atlatl Oil Co.

WITHERS

Eight mi se Pickett Ridge field, centering around J. Caldwell, Wm. Pettus surveys. **Means of Discovery:** Torsion balance, reflection seismograph, The Texas Co., 1934. **Discovery Well:** The Texas Co.'s Pierce Estate C-1, Jan. 4, 1936, 15 bbls per hour 26 gravity oil from 5549 ft. **Type Structure:** Dome. **Approximate Elevation:** 60-90 ft. **Producing Formations:** Frio sands 5470 to 5569 ft. **Average Sand Thickness:** 50 ft. **Productive Acres:** 2400; 1000 developed (includes Five Corners). **Daily Production, July 1, 1938:** 3008 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls (includes Five Corners). **Production Through June, 1938:** 1,165,772 bbls. **Indicated Remaining Reserve:** 18,834,228 bbls. **Deepest Hole:** The Texas Co.'s Pierce Estate C-1, discovery well, dr to 7244 ft, pb and comp. See discovery well. **Casing Programs:** The Texas Co., 16-in, 38 ft; 10-in, 1200 ft; 7-in, 5545 ft. **Gravity Oil:** 26. **Oil Outlet:** Texas Pipe Line Co., 6-in. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholder:** The Texas Co. **Remarks:** The Texas Co. took 25,000 acres of the Pierce Estate, paying a large cash consideration and over $1,000,000 out of oil. The company made a selection of three 4000-acre blocks. The first block was drilled which resulted in a new oil field. The Withers block was the second block drilled by the operators. The third block was Five corners.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LOUISIANA

ACADIA PARISH

BAYOU MALLET

Six mi se Eunice, Acadia-St. Landry Parish line in 14, 47, 51, and 52-7s-1e. **Discovery Means:** Seismograph reflection, Superior Oil Producing Co., 1935. Shell Petroleum Corp., worked in the general area with torsion balance, 1934. Adams Louisiana Corp. ran a profile along w line 24, 25, 36-7s-1e, and along the e, w and s line of 1-8s-1e. **Discovery Well:** Superior and Woodley Pet. Co.'s Adams Smith 1, Jan. 4, 1936, 3,200,000 cu ft of gas, 20 bbls 46.3 gr distillate, perforations 85-98 ft. First commercial oil well, same operator's Bradley 1, from perforations, 6385-90 ft (11 shots), 340 bbls 27.9 gr oil, March 25, 1936. **Type of Structure:** Dome. **Producing Formations:** Discorbis and Heterostegina 6386 to 6395 ft; Marginulina 6996 to 7000 ft, and 7190 to 7198 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 100; 50 developed. **Daily Production, July 1, 1938:** 198 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 140,556 bbls. **Indicated Remaining Reserve:** 859,444 bbls. **Deepest Hole:** Superior's H. Goss 1, 13-7s-1e, dry in Vicksburg at 8405 ft, July, 1936. **Casing Programs:** Superior Oil Producing Co., 13⅜-in, 1206 to 1237 ft; 7-in, 6386 ft, 6980 ft, and 7198 ft. **Oil Outlets:** Trucks. **Gravity Oil:** 6385 to 6390 ft, 27.9; 7190 to 7198 ft, 46.3; 6996 to 7000 ft, 36.6. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Superior Oil Producing Co. and Woodley Petroleum Co.

BOSCO

Centering around SWc Section 26, SEc 28, E½ 33, N 2/3 34 and NEc Section 34-8s-3e. **Means of Discovery:** Refraction seismograph and torsion balance, Pure Oil Co., 1929. **Discovery Well:** Superior Oil Co. and Pure Oil Co.'s P. O. Hernandez 1, April 26, 1934, 32 bbls 38 gravity oil hourly through 12/64-inch choke, 7845-7850 ft. Total depth 8915 ft. **Structure:** Apparently deep seated salt dome, salt not reached. **Producing Formations:** Discorbis (Hernandez sands) at 7830 ft. Heterostegina (Mire sands) 8060 ft, Marginulina (Richard sands) 8573 to 8683 ft, 8883 ft, second Marginulina sand 9041 ft, third Marginulina sand 9118 ft. All the producing sands are in the Oligocene series. **Average Sand Thickness:** 90 ft. **Productive Acres:** 1500. **Daily Production, July 1, 1938:** 5903 bbls. **Estimated Ultimate Recovery:** 30,000,000 bbls (includes Cankton). **Production Through June, 1938:** 16,110,469 bbls. **Indicated Remaining Reserve:** 13,889,531 bbls. **Deepest Hole:** Superior's W. V. Larcade 5, 35-8s-3e, workover, drilled to 10,432 ft, test salt water lower horizons, pb and comp, 8075 ft, February, 1938. **Casing Programs:** Superior Oil Producing Co., 13⅜-in, 1194 to 1266 ft; 9⅝-in, 7792 to 8067 ft; 7-in, 8627 to 8900 ft, slotted pipe is set on bottom. **Oil Outlets:** Pure-Van Pipe Line Co., 8-in. **Range of Gravity:** 36-45. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Pure and Superior on 50-50 basis have 6500-acre lease block, assembled originally by former. **Remarks:** Discovery well had about dozen oil and gas shows besides that at completion level. Its total depth is 8916 ft in Frio, having gone through Heterostegina and Marginulina and into Frio. Water level found around 7870. Several wells in the field are making salt water with some as high as 95 percent. One well is dr to each 20 acres.

BRANCH*

West edge Twp. 8s-2 and 3e, and west of Sections 17 and 20. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1934. **Extent of Development:** Undrilled. **Structure:** Indicated deep salt dome. **Principal Leaseholders:** Humble Oil & Refining Co.

CHURCH POINT*

Sections 24, 25, and 36-7s-1e. **Means of Discovery:** Gas seeps, surface geology; reflection seismograph, Woodley Petroleum Co., Superior Oil Producing Co., 1933; reflection seismograph, Hoard Exploration Co. for Strake Pet. Co., 1937. **Extent of Development:** Woodley et al's Lincoln 1, Section 36, quit at 3000 ft, 1934. Woodley and Superior Oil Producing Co.'s Daigle 1, Section 24, dry at 8415 ft, 1934. Woodley's Newman 1, Section 24, gas show 7925-41 ft, salt water sand in Frio, 8125 ft, April, 1934. T. G. Markley's Daigle Farms 1, 19-7s-2e, faint odor oil 5479-89 ft, gray sand 8135-43 ft, dry at 8506 ft, November, 1937. **Principal Leaseholders:** Superior, Woodley, T. G. Markley. **Remarks:** See Bayou Mallet.

EGAN*

Section 30-9s-1w. **Means of Discovery:** Torsion balance, Calcasieu Oil Co., 1927. **Extent of Development:** Gulf Refining Co.'s Houssiere-Latrielle A-1, abnd shale 5801 ft, 1928. **Principal Leaseholder:** Gulf Oil Corp., Magnolia Pet. Co., Sun Oil Co.

ESTHERWOOD*

Section 54-10s-1w. **Means of Discovery:** Reflection seismograph; Stanolind Oil & Gas Co., 1935. Magnolia Petroleum Co., Continental Oil Co., and Gulf Refining Co. also worked the area with geophysics. **Extent of Development:** Magnolia Pet. Co.'s Homeseekers 1, salt water sand 5514 to 5518 ft, electrical logging device showed 12 ohms resistivity at 5870 to 5890 ft, abn 9456 ft, July, 1936. **Principal Leaseholders:** Stanolind, Magnolia, Gulf.

IOTA*

Sections 14, 25, 26, 35, 36-8s-2w. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1929; geophysics, Magnolia Petroleum Co., 1934, 1937. **Extent of Development:** Magnolia Petroleum Co.'s Duson 1, 14-8s-2w, dry at 8753 ft, Dec., 1937. **Principal Leaseholder:** Magnolia Petroleum Co.

*Prospect. †Salt dome, no production. ‡Gas field.

JENNINGS

Irregular Sections 40, 41, 42, 45, 46, 47, 48-9s-2w. **Discovery Means:** Elevation, gas escapes. Subsurface geology around the flanks. **Discovery Well:** Jennings Oil Co.'s No. 1, Section 46 (later Gulf's Jennings-Clemont lease), blew in, August, 1901, spraying oil and sand in considerable quantity from 1882 ft. **Type Structure:** Piercement type salt dome, top cap rock 2000 ft, salt 3716 ft. **Producing Formations:** Plio-Miocene sands 1500 to 2121 ft; Miocene 2700 to 4500 ft; Oligocene 5021-5150 ft, 5480 to 5530 ft, 5780 to 5790 ft, 6355 to 6367 ft, 6460 to 6520 ft, 6650 to 6719 ft, 6800 to 6875 ft, 7025 to 7156 ft, 7225 to 7447 ft; Oil shows in Oligocene 7683 to 7804 ft, 8613 to 8698 ft. North flank sand 6954-77 ft, 6791-6829 ft, 7284-7314 ft. Southeast side, 7528-40 ft. **Average Sand Thickness:** 55 to 100 ft. **Productive Acres:** 800; 500 developed. **Daily Production, July 1, 1938:** 20,706 bbls. **Estimated Ultimate Recovery:** 90,000,000 bbls. **Production Through June, 1938:** 58,617,073 bbls. **Indicated Remaining Reserve,** 31,382,927 bbls. **Deepest Hole:** Yount Lee Oil Co.'s Houssiere-Latrielle 9, SE flank, 8900 ft, March, 1931. **Casing Programs:** Superior Oil Producing Co., 10¾-in and 11¾-in, 1136 to 1477 ft; 7-in, 6300 to 7131 ft. W. B. Burton, 18-in, 60 ft; 10¾-in, 1500 ft; 7-in, 7000 ft. Stanolind Oil & Gas Co., 24-in, 18 ft; 18⅝-in, 1222 ft; 7-in, 7917 ft. **Oil Outlets:** Barge, Continental Oil Co.'s 6-in. Standard of Louisiana's 6-in. **Gravity Oil:** 1900 to 2100 ft, 20 to 22 degrees; 3550 to 3650 ft, 26 to 30 degrees; all other depths from 33 to 40 degrees. **Rigs Running, July 1, 1938:** 13. **Principal Leaseholders:** The Texas Co., Stanolind Oil & Gas Co., Gulf Oil Corp., Abshire-Bolyard Oil Co., Ratcliff Oil Co., Port City Oil Co., Jennings Petroleum Co., E. L. Myers, Cline, Smith & Cline, E. F. Simms, Superior Oil Co., Glassel et al, W. B. Burton, Shell Petroleum Corp. **Remarks:** Superior and Shell opened a new sand on S and W side of the field in 1936 and revived drilling. A new sand was discovered on N flank in 1938 by Superior. This field was the first discovered in South Louisiana and has produced more oil than any other field. Has been known as Evangeline. **Heaving Shale:** Reported in Shell's Community 3, 41-9s-2w, at 7492 ft.

MIDLAND*

Sections 46, 47 and 48-10s-1 and 2w. **Means of Discovery:** Torsion balance, Gulf Oil Corp. **Extent of Development:** Gulf's Broussard 1, 48-103-2w, tried to blowout 9678 ft, set 7-in csg 9622 ft, top Heterostegina 9635 ft, ohm 9955 ft, Jan., 1938. **Principal Leaseholders:** Gulf, Magnolia Petroleum Co., Sun Oil Co.

MOWATA*

Near Mowata, centering around 19, 30-7s-1e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1936. **Extent of Development:** John Mayo et al's Bank of Commerce 1, 19-7s-1e, topped dry sand 8551 ft equivalent to Ortego sand at Tepetate, abd 9008 ft, July, 1937. **Principal Leaseholders:** Shell. On W side of Shell's block, Rycade, Humble, Tide Water, Stanolind and Sun have acreage. **Remarks:** See Trilby and North Iota prospects.

NORTH CROWLEY

North of Crowley, centering around Sections 34, 45-8s-1e. **Discovery Means:** Surface geology. Reflection seismograph and gravity work, Humble Oil & Refining Co., 1935. **Discovery Well:** Humble's Federal Land Bank 1, Sept. 22, 1937, 28 bbls 36 gravity oil per hour, ¼-in choke at 8102 ft. **Type Structure:** Believed to be deep seated salt dome but no domial material has been encountered. **Producing Formations:** Oligocene sands at 7728-35 ft; 8082 to 8160 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 800; 250 developed. **Daily Production, July 1, 1938:** 596 bbls. **Estimated Ultimate Recovery:** 8,000,000 bbls. **Production Through June, 1938:** 168,160 bbls. **Indicated Remaining Reserve:** 7,831,840 bbls. **Deepest Hole:** Humble's I. Trahan 1, SE of production, 3-9s-1e, 10,632 ft, dry May, 1938. Made tests around 9700 ft, showed salt water. **Casing Programs:** Humble, 16-in, 220 ft; 10¾-in, 2500 ft; 7-in, 8110 ft. **Oil Outlets:** Standard of Louisiana's 6-in. **Gravity Oil:** 8100 ft, 36 gravity. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Humble (9000-acres). **Remarks:** The discovery well was drilled to 9339 ft. A series of drill-stem tests were made up the hole to the producing sand. All the tests showed salt water except the last sand tested.

NORTHEAST EGAN*

Four mi ne Egan prospect, around Sections 14, 15-9s-1w. **Means of Discovery:** Torsion balance, Calcasieu Oil Co., 1927; reflection seismograph, Adams Louisiana Corporation, 1934; geophysics, Shell Petroleum Corp. **Extent of Development:** Undrilled. **Principal Leaseholders:** Shell, Magnolia Petroleum Co., Sun Oil Co.

NORTH IOTA*

Section 10-8s-1w. **Means of Discovery:** Torsion balance, Calcasieu Oil Co., 1929. **Extent of Development:** Joint test of Calcasieu Oil Co., Union Sulphur Co. and Magnolia Petroleum Co., abnd in shale, 6229 ft, May, 1930. See Mowata prospect.

RIVERSIDE*

Sections 42-8s-2w, 42, 43-8s-3w, 59, 60, 61, 62-9s-2w, 37, 38, 39, 1-9s-3w. **Means of Discovery:** Torsion balance, Paul Brandt, 1930. Structure type prospect. Atlantic Refining Co. did work in this area in 1936. **Extent of Development:** Mills Bennett Production Co.'s Riverside Irrigation 1, Section 61, dry in shale, 7603 ft, 1934. **Principal Leaseholders:** Shell Petroleum Corp., Sun Oil Co.

SOUTH CROWLEY

Four Mi s of Crowley, centerin garound Section 22-10s-1e. **Discovery Means:** Reflection seismograph, Humble Oil & Refining Co., 1934. Shell Petroleum Corp., torsion balance. **Discovery Well:** Humble's Boyd & Finch 1, April 29, 1938, 21 bbls per hour, ¼-in choke, 34.7 gravity, started making salt water, was killed,

brought in again but gas/oil ratio was 4150 to 1 also showing salt water. Was killed and completed on May 23, 1938, 35 barrels of 35.2 gravity oil daily at 7308 to 7314 ft. **Type Structure:** Dome. **Producing Formations:** Miocene sands 7308 to 7314 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 10 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 1852 bbls. **Indicated Remaining Reserve:** 998,148 bbls. **Deepest Hole:** Discovery well, drilled to 10,222 ft. **Casing Programs:** Humble, 13⅜-in, 2191 ft; 9⅝-in, 7474 ft. **Oil Outlet:** Storage. **Gravity Oil:** 7308 to 7314 ft, 35.2. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Humble, Sun Oil Co., Stanolind Oil & Gas Co. **Remarks:** Was called Ebenezer in 1936 Gulf Coast issue. Humble drilled four deep wildcats on this prospect before production was established.

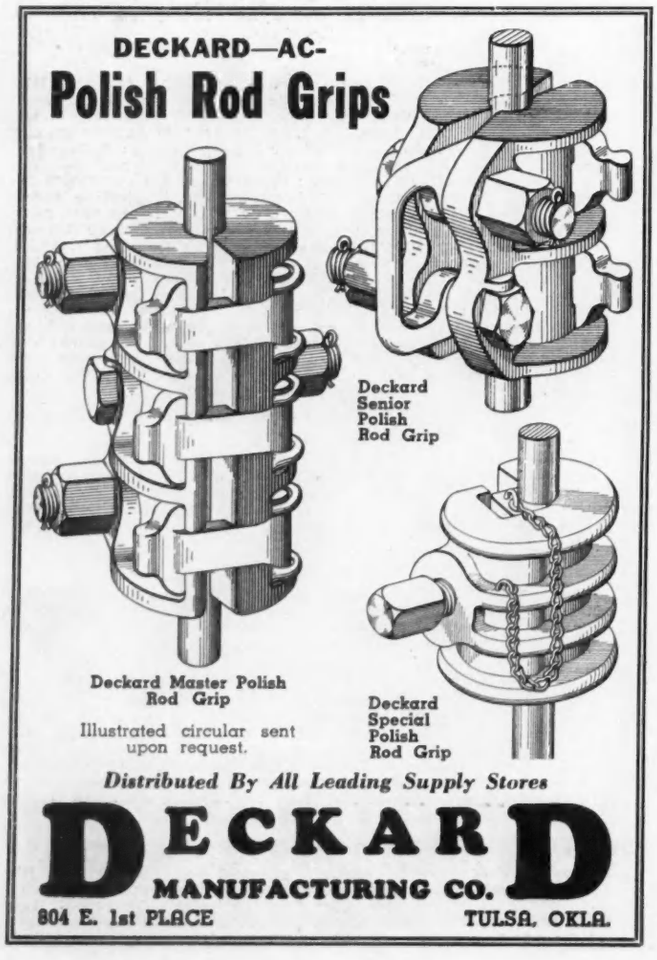
TEPETATE

Six mi nw of Iota, centering around Sections 28, 29, 30 and 34-7s-2w. **Means of Discovery:** Torsion balance, Mordelo L. Vincent, 1930; reflection seismograph, Continental Oil Co., 1934. **Discovery Well:** Continental's Ortigo 1, 28-7s-2w, 200 bbls 35.5 gravity oil, 8313 ft, August 16, 1935. Estimated 20,000,000 cu ft gas at 8303 ft, August 2, 1935. **Structure:** Deep seated salt dome or an anticline-type close structure. **Producing Formations:** Lower Marginulina-Frio sands, 8297 to 8323 ft; gas sand 8258 ft and 7773-77 ft. **Average Sand Thickness:** 35 ft. **Productive Acres:** 1500, developed. **Daily Production, July 1, 1938:** 5582 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production Through June, 1938:** 4,738,102 bbls. **Indicated Remaining Reserve:** 15,261,898 bbls. **Deepest Hole:** Two mi w of production, General Crude Oil Co.'s Vincient 1, 31-7s-2w, sand show oil 7375 to 7425 ft, dr to 9181 ft, abn, May, 1936. **Casing Program:** Continental Oil Co., 10¾-in, 1450 to 1528 ft; 5¾-in, 7297 to 8323 ft. Slotted pipe is set on bottom. **Oil Outlet:** Continental's 6-in oil line and an 8-in gas line to Calcasieu river, 50 mi; gas is sold to industries at Lake Charles. **Range of Gravity:** 33-45. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Continental. **Remarks:** First Lower Marginulina-Frio production found in the Louisiana Gulf Coast. Referred to as Basile. Continental Oil Co. has a gasoline plant in field which is capable of handling 50,000,000 cu ft of gas daily.

TRILBY*

North and east of Tepetate field, centering around Sections 16, 20, 26 and 29-7s-1w. **Means of Discovery:** Geophysics, Gulf Refining Co., 1934. Area worked by Sun Oil Co., Humble Oil & Refining Co. **Extent of Development:** Jack Dalton's Setting 1, 17-7s-1w attempted drill-stem test 5100 ft, drilled 5119 ft, abn, 1938. **Principal Leaseholders:** Humble, Gulf, Sun, Federal Petroleum Co. **Remarks:** North Iota and Trilby considered by many as same.

*Prospect. †Salt dome, no production. ‡Gas field.



ALLEN PARISH

BAYOU BLUE SPRINGS*

Section 23, 10-6s-3w, **Means of Discovery:** Reflection seismograph, 1938, Stanolind Oil & Gas Co., Humble Oil & Refining Co., Sun Oil Co., Magnolia Petroleum Co. **Principal Leaseholders:** Humble, Stanolind. **Remarks:** Humble dropped acreage in this area after working with reflection seismograph in 5-6s-4w. Also known as Elton.

BEL*

Section 28-6s-7w, sw Reeves. **Means of Discovery:** Surface geology, geophysics, 1934-35, Humble Oil & Refining Co., reflection seismograph, 1937. **Extent of Development:** Humble's J. A. Bel 1, spudded April 4, 1936, slight show gas 3760 ft, top sand 7769 ft, blew out, caught fire, cratered and abn 7770 ft, May 17, 1936. Producing from Frio topped at 5813 ft. J. A. Bel 2, 933 ft ne of Bel 1, gas show 2943 ft, perforated csg 2876 to 2881 ft, 18 shots, pumped in cement to fill salt water sand, set 9⅝-in csg 7490 ft, DST 7469 to 7816 ft, 11 thribbles mud, 75 thribbles salt water, dr to 7869 ft, DST 7469 to 7816 ft, 21 minutes, flowed water and showed 425 pound pressure. Killed well dr to 9400 ft, odor of oil and gas, abn 9833 ft, Sept. 11, 1936. **Principal Leaseholder:** Humble.

INDIAN VILLAGE*

Northwest of Lock-Moore prospect, centering around 10-7s-6w. **Means of Discovery:** Reflection seismograph, Stanolind Oil & Gas Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholders:** Stanolind, Magnolia Petroleum Co.

MITTIE*

Two mi n and e of Ten Mile, Section 21-3s-5w. **Means of Discovery:** Reflection seismograph. Humble Oil & Refining Co., 1934, Superior Oil Co., 1936, 1937. **Extent of Development:** Humble's Industrial 1, sands showing oil, 7460-64 and 7564-70 ft, dr in Cockfield 8094 ft, 1935, was abn. **Principal Leaseholders:** Superior Oil Co., Gulf Oil Corp.

OBERLIN

Near the town of Oberlin, centering around Section 19-5s-3w. **Means of Discovery:** Geophysics, Gulf Oil Corporation, 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Gulf Oil Corporation.

ASCENSION PARISH

BRIGNAC*

Centering Sections 13, 14, 15-9s-3e. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1933. **Extent of Development:** Undrilled. **Principal Leaseholders:** Humble.

DARROW

Sections 29, 30, 31, 32, 33, 34-10s-2e. **Means of Discovery:** Torsion balance, Gulf Refining Co., 1937. **Discovery Well:** Rio Bravo Oil Co.'s Community 1, Section 31, 100 bbls, 28 gravity oil per hour, ½-in choke, from sand at 4008-4035 ft, depth 4035 ft, flowed 2400 bbls, Sept., 1932. **Structure:** Salt dome, top salt 4900 ft. **Producing Formations:** Miocene sands 4008-35 ft, 4776-4827 ft and 5513 to 5900 ft; Oligocene sands 6900 to 6995 ft. **Average Sand Thickness:** 36 ft. **Productive Acres:** 200; 100 developed. **Daily Production, July 1, 1938:** 2848 bbls. **Estimated Ultimate Recovery:** 15,000,000 bbls. **Production Through June, 1938:** 1,631,112 bbls. **Indicated Remaining Reserve:** 13,368,888 bbls. **Deepest Hole:** Humble Oil & Refining Co.'s Gumble 9, 7980 ft, heaving shale, abn, April, 1937. **Casing Programs:** Humble, 16-in, 228 ft; 10¾-in, 3000 ft; 7-in, 5500 to 6900 ft. **Oil Outlet:** Barge, Mississippi river. **Range of Gravity:** 4008 to 4035 ft, 28 degrees; 5500 to 5900 ft, 32 to 41 degrees, 6985 to 6995 ft, 33 degrees. **Rigs Running July 1, 1938:** One. **Principal Leaseholders:** Humble Oil & Refining Co., Gulf Oil Corp.; Turnbull & Irwin in river on w edge of dome. **Remarks:** The discovery well had six sands showing oil before encountering sand in which it was completed. Humble's Gumble 2, sw flank test, extended production one mi and found a new producing horizon, January, 1935. Humble took dome from Turnbull & Irwin in 1935. **Heaving Shale:** Is found around 7800 ft.

PRAIREVILLE*

North of Praireville, centering Section 38-8s-2e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** Shell, Tide Water Associated Oil Co., Stanolind Oil & Gas Co. North of this prospect, Cavalier Oil Co. drilled a number of tests near Hopevilla. See Slaughter prospect.

SORRENTO

Sections 14, 15, 22, 23-10s-4e. **Means of Discovery:** Gas seepages, refraction seismograph, Gulf Refining Co., 1926. **Discovery Well:** Gulf's United Lands Co. 4, Section 15, Feb. 1, 1928, 1000 bbls 26.4 gravity oil daily, from cap rock at 1657 ft. **Structure:** Salt dome, top cap rock 1568 ft, salt 1920 ft. **Producing Formations:** Cap 876-901 ft, 1250 ft, 1312-33 ft, 1615-1650 ft; Middle Oligocene 4301 to 4332 ft, 4408 to 4430 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 100; 75 developed. **Daily Production, July 1, 1938:** 370 bbls. **Estimated Ultimate Recovery:** 2,000,000 bbls. **Production Through June, 1938:** 859,829 bbls. **Indicated Remaining**

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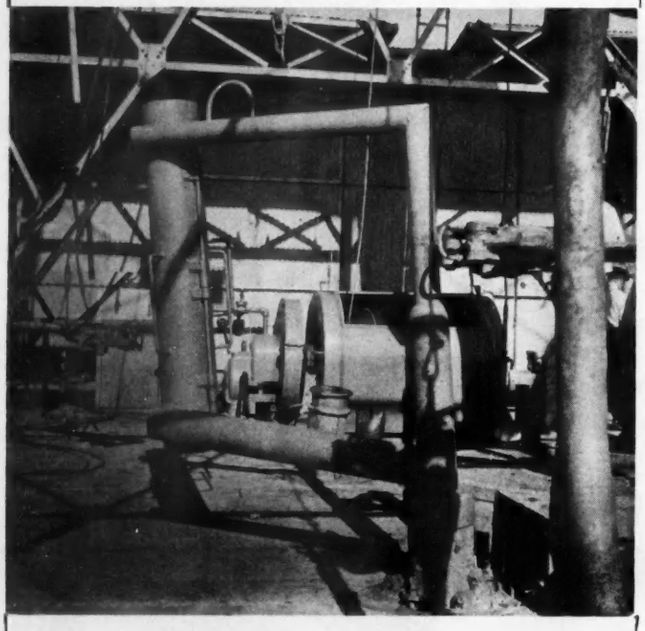

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EVANGELINE LOUISIANA

Reserve: 1,104,171 bbls. **Deepest Hole:** Sorrento Oil Co.'s Bernard 1, n flank, 9-10s-4e, oil and salt water sands 5475 to 5490 ft, 6260 to 6270 ft, dr to 6734 ft, pb and sdtr dr to 7004 ft in salt. Top salt 6904 ft, top cap rock, 4850 ft, dry at 7004 ft, June, 1937. **Casing Programs:** Pan American Production Co., 16-in, 92 ft; 10¾-in, 1700 ft, 4291 ft. **Oil Outlet:** Tank cars. **Range of Gravity:** 23.5-32. **Rigs Running July 1, 1938:** One. **Principal Leaseholders:** Pan American Production Co. (purchased Athens Oil Co., April 1, 1936), Sorrento Oil Co. **Remarks:** First dome to produce oil east of the Mississippi river.

ASSUMPTION PARISH

AMELIA*

Centering around Section 66-16s-14e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** Shell, Sun Oil Co.

GRASSEY LAKE*

Northeast of Morgan City, centering Section 13-15s-13e. **Means of Discovery:** Torsion balance, reflection seismograph, Shell Petroleum Corp., 1935. **Extent of Development:** Undrilled. **Principal Leaseholder:** Shell.

LABADIEVILLE*

Six mi nw Labadieville, Sections 33, 34, 36, 38-14s-15e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1928 and 1934, Humble Oil & Refining Co. **Extent of Development:** Barnsdall Oil Co.'s Williams Cypress Co. 1, 38-14s-14e, no showings, abnd shale, 8154 ft, 1933. **Principal Leaseholder:** Humble. **Remarks:** Shown in 1933 Gulf Coast Issue, The Oil Weekly as Avoca.

LAKE VERRET*

Centering around Lake Verret in Twp 13s-R-13e and 13s-12e. **Means of Discovery:** Reflection seismograph and torsion balance, Tide Water Associated Oil Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholders:** Tide Water, Shell Petroleum Corp.

NAPOLEONVILLE†

Irregular Sections 41, 42, 45, 46-12s-13e. **Means of Discovery:** Gas seepage, seismograph, Gulf Refining Co., 1926. It was proven a salt dome by Gulf in 1930. **Structure:** Salt dome; top cap rock 413 ft, salt 685 ft. **Extent of Development:** 16 dry holes, 1926-31 (including 10 sulphur tests). **Deepest Hole:** Gulf's Armalise Planting Co. 1, abnd water sand, 6037 ft. **Principal Leaseholders:** Union Sulphur Co. **Remarks:** Sulphur tests by Union, Texas Gulf Sulphur Co. Flank is leased for oil development.

AVOYELLES PARISH

EOLA*

Section 12-2s-2e. **Means of Discovery:** Geophysics, Amerada Petroleum Corp., 1935. **Extent of Development:** Undrilled. **Principal Leaseholders:** Amerada, Pete Wiggins, Harry Lawson, Tide Water Associated Oil Co., Stanolind Oil & Gas Co.

MARKSVILLE—Egg Bend*

Centering 21, 25-2n-3e. **Means of Discovery:** Geophysics, Coastal Minerals Development Co., 1936. Sinclair-Prairie Oil Co., Torsion balance and reflection seismograph, 1937. **Extent of Development:** Coastal Minerals Development Co.'s Purdy Hess 1 showed resistivity and porosity at 5778 to 5780 ft, abn 6054 ft, August, 1937. G. C. Koch's Kelonel 21-2n-3e topped Sparta 4790 ft, slight show of oil 5211-46 ft, salt water sands 5246-64 ft, abn 6021 ft, April, 1938. **Principal Leaseholders:** Coastal Minerals Development Co., Sinclair-Prairie Oil Co., Gulf Oil Corp., Sun Oil Co., G. C. Koch.

BEAUREGARD PARISH

BANCROFT

North of Bancroft, centering Section 10-6s-13w. **Discovery Means:** Geophysics, Republic Production Co., 1937. Gulf Refining Co. did considerable pendulum work in this area in 1934. **Discovery Well:** Republic's Lutcher-Moore 1, May 4, 1938, 50 bbls distillate, 3,000,000 cu ft gas, 7575-7580 ft. **Type Structure:** Dome. **Producing Formations:** Oligocene sands, 7575 to 7580 ft. **Average Sand Thickness:** 5 ft. **Productive Acres:** One well. **Deepest Hole:** Discovery well dr to 8050 ft, pb. **Casing Programs:** Republic, 10¾-in, 1050 ft; 5½-in, 7698 ft. **Oil Outlet:** Storage. **Rigs Running July 1, 1938:** One location made. **Principal Leaseholder:** Republic.

DE QUINCY*

Sections 22, 23, 26, 27-7s-12w; 26-6s-13w. **Means of Discovery:** Torsion balance, reflection seismograph, Federal Petroleum Co., 1934. **Extent of Development:** Federal Petroleum Co.'s Lutcher-Moore B-1, 26-6s-13w, show of oil 7878-7913 and 8395 ft, quit in Cockfield, 8415 ft; Lutcher-Moore 1, 4-7s-12w, quit at 8722 ft, August, 1934. Gulf Refining Co.'s Lutcher-Moore 1-A, 25-6s-12w, reported oil show in Cockfield, 7961 ft, abnd 8354 ft, December, 1934. **Principal Leaseholders:** Gulf, Federal, Magnolia Petroleum

*Prospect. †Salt dome, no production. ‡Gas field.

Co. **Remarks:** Gulf and Humble Oil & Refining Co. leased large blocks of Lutcher-Moore Lumber Co. land in this parish and the two companies worked together in surveying but later dropped acreage.

DRY CREEK*

Section 11-5s-7w. **Means of Discovery:** Surface geology; torsion balance and reflection seismograph, 1931. **Extent of Development:** Humble Oil & Refining Co.'s Long Bell 1, reported oil show in Cockfield, 8350 ft, abnd 9302 ft, May, 1934. **Remarks:** Leased originally by Adams Louisiana Co. After Humble drilled the deep dry hole, Continental Oil Co. worked the area with reflection seismograph but failed to locate structure. Five mi ne above test, O'Brien Bros.' Long Bell 1, 34-14s-6w, Allen Parish abnd 6248 ft, May, 1933. **Principal Leaseholders:** Humble, Gulf.

CALCASIEU PARISH

BIG WOODS*

Three mi sw Lucas, centering Section 2736-8s-12w. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1934, Sun Oil Co., 1937. **Extent of Development:** Humble's Industrial 1-B, 27-8s-12w, quit at 9532 ft, January, 1935. **Principal Leaseholder:** Humble. **Remarks:** Sometimes known as DeQuincy, the two areas being closely associated. Humble dropped leases; Continental Oil Co. and Sun Oil Co. shot the area with reflection seismograph in 1937 and released.

BUHLER*

Southwest of Edgewood, centering Section 30-8s-9w. **Extent of Development:** Fred Oil Co.'s Faist 1, abn 4580 ft., Nov. 1936. General Crude Purchasing Co.'s Buhler 1, topped Frio at 6460 ft, abn 8481 ft in heaving shale, Oct., 1936. **Heaving Shale:** Penetrated under Buhler tract.

EAST LAKE CHARLES*

Centering Sections 16, 28-9s-7w. **Means of Discovery:** Geophysics, Shell Petroleum Corp., 1934; Wheeler Oil Co. **Extent of Development:** Wheeler's Gabbert 1, 28-9s-7w, quit at 8969 ft, April, 1935; School Land 1, 16-9s-7w, dry 7160 ft, June, 1936. J. Elmer Thomas' Farmer Land Co. 1, 20-10s-7w, slight show oil 3677 to 3688 ft. and 3780 ft, attempted dst but failed, abn 3911 ft, Oct., 1936. Wheeler's School Land 2, 16-9s-7w, shut down 641 ft, July 1, 1938. **Principal Leaseholders:** L. A. Wheeler, Shell.

EAST ORANGE*

Section 21-11s-12w. **Means of Discovery:** Torsion balance, pendulum, Gulf Refining Co., 1934. Reflection seismograph and torsion balance Humble Oil & Refining Co., 1937. **Extent of Development:** Gulf's Stark 1, dry at 8566 ft March, 1935. **Principal Leaseholders:** Gulf, Noble-Abercromble, Humble.

EDGERLEY

Sections 20, 21, 27, 28, 29-9s-11w. **Means of Discovery:** Gas escapes; paraffin dirt. **Discovery Well:** Bright Oil Co.'s Bright 1, 1912, 250 bbls, 17.5 gravity, 1500 ft. **Structure:** Salt dome, top cap rock 3958 ft, salt 3991 ft. **Producing Formation:** Pliocene-Miocene sands at 2500 to 4200 ft. **Average Sand Thickness:** 125 ft. **Productive Acres:** 215. **Daily Production, July 1, 1938:** 151 bbls. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production Through June, 1938:** 8,511,059 bbls. **Indicated Remaining Reserve:** 1,488,941 bbls. **Deepest Hole:** Yount-Lee Oil Co.'s Sulphur Mining Co. 1, Section 33, se edge of field, quit in shale at 8414 ft, February, 1934, after having tried to blow out at 7900 ft. **Casing Programs:** Edgerly Oil Corp., 10-in 60 ft; 6⅝-in 3679 ft. **Oil Outlet:** Gulf Pipe Line Co., 6-in. **Range of Gravity:** 17-35.7. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Gulf Oil Corp., Rex Petroleum Corp., Wilson & Broach, Hercules Oil Co., C. M. Crotty, Green Oil Co., Sun Oil Co., The Texas Co., Moore & Emerson. **Heaving Shale:** Found below 6200 ft.

ENGLISH BAYOU

One mi s of Gillis field, 6 mi ne Lake Charles, Sections 13, 14-9s-8w. **Means of Discovery:** Vacuum Oil Co., torsion balance, June, 1933, and later worked by Fohs Oil Co., Independent Exploration Co. did a reconnaissance picture for H. C. Cockburn. Geophysical Service Co. reflection seismograph, worked out several faults in the field. **Discovery Well:** Fohs Oil Co.'s Castle 1, 7067 ft oil sand topped at 7042 ft, 1400 bbls daily, February 8, 1935. **Structure:** Fault on a large salt ridge. **Producing Formations:** Marginulina sands of the Middle Oligocene, 7021-7102 ft, gas sand 6976 ft, and 7024 ft, 7371-76 ft. On n side of fault, Union Sulphur Co.'s Castle 3 had sands 5156-5180 ft. Castle 5 had gas sands 6043-46 ft; Castle 7, 7074-85 ft. Small amount of production is found in Graben between Gillis and English Bayou. **Average Sand Thickness:** 20 ft. **Productive Acres:** Included with Gillis. **Daily Production, July 1, 1938:** Included with Gillis. **Estimated Ultimate Recovery:** Included with Gillis. **Deepest Hole:** Fohs Oil Co.'s Airhart 1, dr to 9246 ft, October, 1935, tried to blow out, had sand from 9242-9246 ft, in Vicksburg, pb and comp for prod at 7060 ft. **Casing Program:** Fohs Oil Co., 10¾-in, 1400 to 1700 ft, 7-in, 7037 to 7053 ft. Union Sulphur Co., 10¾-in, 1466 ft, 5-in 7042 ft. **Oil Outlet:** Fohs Oil Co. 6-in line to barge, Calcasieu river. **Range of Gravity:** 5150-60 ft, 30 degrees; 7030-66, 41 and 42 degrees. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Fohs Oil Company, (1700 acres), Union Sulphur Co. **Remarks:** English Bayou pool is part of a large salt ridge which includes Gillis, Welch, Roanoke and possibly Lockport fields. Fohs Oil Co. by means of geophysical work and by drilling developed a major fault on the south half of the salt ridge and also raidial faults in several tracts. (See Gillis).

*Prospect. †Salt dome, no production. ‡Gas field.

GILLIS

Northeast of Lake Charles, centering around Sections 1, 11, 12, 14-9s-8w. **Means of Discovery:** Gas seepages; Union Sulphur Co., refraction 1928 and then rechecked with reflection seismograph. Shell Petroleum Corp., torsion balance, 1930. Gulf Refining Co., torsion balance, 1931. **Discovery Well:** Union Sulphur Co.'s Barbee Estate 2, came in flowing by heads a small stream of wash water with a trace of oil, October, 1934, closed in pressure 200 pounds; October 15, 1934, it flowed at the rate of 240 bbls, 35 percent salt water from 6760 ft. **Structure:** Deep seated salt dome. **Producing Formations:** Marginulina sands of the Oligocene series at 6396 to 6413 ft, 6660 to 6787 ft; 7144 to 7149 ft; 7500 ft; 9101 ft gas sand. Graben oil is found at 5234 to 5267; 5421 to 5431 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 1000; 800 developed. **Daily Production, July 1, 1938:** 9098 bbls. **Estimated Ultimate Recovery:** 22,000,000 bbls. **Production Through June, 1938:** 14,672,861 bbls. **Indicated Remaining Reserve:** 7,327,139 bbls. **Deepest Hole:** Union Sulphur Co.'s Barbe Estate 12, blew out at 9101 ft, March, 1937. **Casing Programs:** Union Sulphur Co., 10¾-in, 1400 to 1600 ft, 6⅝-in, 5400 ft. 7-in, 6500 to 6750 ft. The Texas Co., 18⅝-in, 44 ft; 10¾-in, 1206 ft, 7-in 6704 ft. **Oil Outlets:** Union Sulphur Co.'s 6-in line to Rose Bluff. Barge. **Range of Gravity:** 6600-6750, 34 to 36 degrees; 5250-5270, 30 degrees. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Union Sulphur Co., The Texas Co., Fohs Oil Co. **Remarks:** A large Graben exists between English Bayou and Gillis field. Union Sulphur Co. has repressuring plant which takes gas at 950 pounds and raises to 2460 pounds, injected at 6739 to 6745 ft. Company disposes of salt water by pumping it down into a 1500-foot well. One well is drilled to each 10-acres.

IOWA

Sixteen mi e of Lake Charles, Sections 7, 8, 18-9s-6w, 12, 13-9s-7w. **Means of Discovery:** Gas seepage; seismograph, Shell Petroleum Corp., 1929. Vacuum Oil Co., torsion balance. **Discovery Well and Date:** Vacuum Oil Co.'s Bert T. Wait 1, Section 12, Jan., 1931, 300 bbls, 29 gravity oil, 5008 ft; deepened and completed October 19, 1931, 1500 bbls 40 gravity oil daily, ¾-inch choke, sand at 6958-6971 ft. **Structure:** Regarded as deep salt dome, although no dome material encountered. **Producing Formations:** Miocene sands at 4397, 4470, 4862, 5008, 5203-26 ft, 5539, 5760-75 ft, 5917 ft; Marginulina zone of Oligocene at 6538-73 ft, 6636 to 7027 ft. **Average Sand Thickness:** 55 ft.
Productive Acres: 1000; 950 developed. **Daily Production, July 1, 1938:** 14,535 barrels. **Estimate Ultimate Recovery:** 45,000,000 barrels. **Production Through June, 1938:** 32,095,861 bbls. **Indicated Remaining Reserve:** 12,904,139 bbls. **Deepest Hole:** Shell Petroleum Corp.'s Hyed 19, dr to 9161 ft, sand showing oil 7245 ft and 8656 ft, pb April, 1936, comp. as producer 5203-26 ft. **Casing Program:** Shell, 9⅝-in, 1200 to 1300 ft. 5 and 7-in, 4400 to 7000 ft. Magnolia Petroleum Co., 18⅝-in, 60 ft., 13⅜-in, 1377 ft, 7-in 5300 ft. **Oil Outlet:** Shell Pipe Line Co., 8-in to Calcasieu river, Barnsdall and Magnolia Pipe Line Co., 6-in. **Range of Gravity:** 4400 ft, 24 degrees; 4500 ft, 26 degrees; 5000 ft, 28 degrees; 5200 ft, 32 degrees; 6550 ft, 42 degrees; 6950 ft, 40 degrees. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Shell, Magnolia, Barnsdall Oil Co. **Remarks:** Shell has a gasoline plant in the field. Dry gas is taken by United Gas Co. One well is drilled to every 10 or 12 acres. Iowa is considered a model field and all producing wells are flowing due to careful handling of pressure and gas/oil ratios. Proration is taken by 25% of potential production taken on 24-hour test through 23/64-in choke.

LOCKPORT

Sections 8, 9-10s-9w. **Means of Discovery:** Gas escapes. **Discovery Well and Date:** Vacuum Oil Co.'s Miller 1, Sept., 1924, 3000 bbls 24.5 gravity oil daily, 3876 ft. **Structure:** No cap rock or salt encountered. but structure regarded as deep seated salt dome. **Producing Formation:** Miocene and Middle Oligocene sands at 2200 to 2400; 2900 to 3400; 3855; 4350 to 5000 ft; 5000 to 5667 ft; 6461 to 6718 ft; 6917-30 ft. **Average Sand Thickness:** 100 ft. **Productive Acres:** 300. **Daily Production, July 1, 1938:** 1014 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production Through June, 1938:** 14,648,751 bbls. **Indicated Remaining Reserve:** 5,351,249 bbls. **Deepest Hole:** Magnolia Petroleum Co.'s Bordages 11, quit in shale in Marginulina, 7902 ft, May, 1934. **Casing Program:** Magnolia, 18⅝-in, 88 ft; 10¾-in, 1200 ft; 7-in, 4965 to 6900 ft. **Oil Outlet:** Barge. **Range of Gravity:** 2200 ft, 3850 ft, 4300 ft, 4700 ft, 24 gravity; 4900 ft, 36 gravity; 6900 ft, 42 gravity. **Rigs Running July 1, 1938.** One. **Principal Leaseholders:** Magnolia and Gulf Oil Corp. (jointly), Stanolind Oil & Gas Co., Union Sulphur Co. **Heaving Shale:** Encountered around 7200 ft.

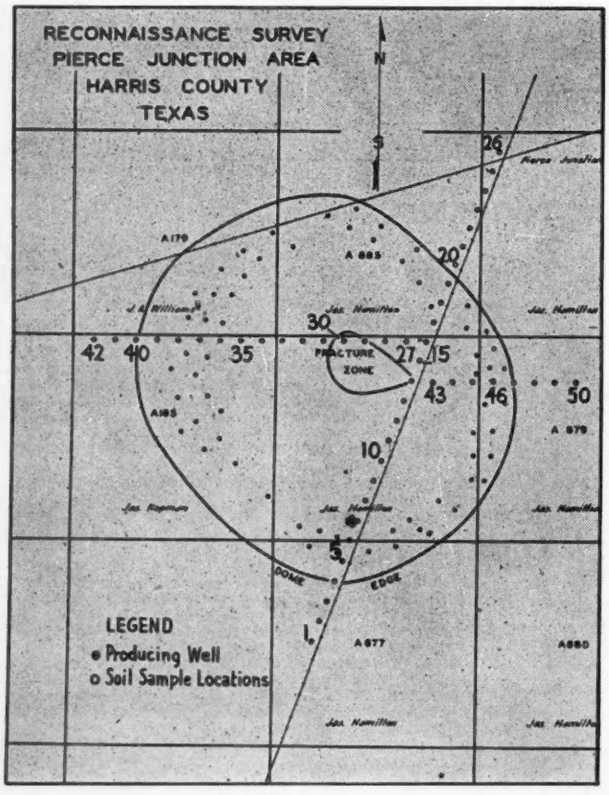
NIBLETTS BLUFF*

North of Toomey and ne of Vinton, centering Section 13-10s-12w. **Means of Discovery:** Surface indications, showings reported in shallow test, geophysical work by A. G. Oliphant. **Extent of Development:** Plummer & McDaniels Couburn-Hood 1, 13-10s-12w, quit in water sand 7378 ft, January, 1935. A. G. Oliphant's Calcasieu National Bank 1, 23-10s-12w, slight show of oil 6378 to 6381 ft, quit in Frio at 7508 ft, March, 1936, top Frio 7016 ft. **Principal Leaseholders:** Plummer & McDaniels, Steinberger Petroleum Co. Operators are reported to have surrendered leases in this area.

NORTHWEST STARKS*

Northwest of Starks, centering around 1-8s-13w. **Means of Discovery:** Surface indications, showings reported in shallow wells, supposed to be torsion balance and magnetometer "high" in area, reflection seismograph, McCollum & Davenport, 1935 and 1936. **Extent of Development:** McCaleb's Grey 1, dry at 1555 ft, August, 1934. D & D Oil Co.'s Lutcher-Moore 1, 1-8s-13w, topped Vicksburg 6727 ft, tried to blowout at 8398 ft, sand showing oil 8398 to 8415 ft, bridged, abn 8557 ft, May, 1937. Same operator's Lutcher-Moore 2, 1-8s-13w, drill stem test 6945, gas cut mud; 9⅝-in, 8262 ft; sdtr 8228 ft; 7-in on to 9⅝-in, 8597 ft; top Cockfield 8300 ft; dr to 9674 ft, perforated 8550-60 ft, showed gas and salt water; perforated 8396-8418 ft, showed gas and salt water; perforated 7160 to 7205 ft, 6925-43 ft, and 6975 to 7030 ft, recovered

SOIL ANALYSIS SURVEYS



. . . Define Salt Dome Production

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The above map of Pierce Junction shows a Reconnaisance Survey, consisting of two lines of soil samples. Stations are indicated by round dots. Numbering begins at the South, continuing North to 26. The two lines cross (with a little offset) at Station 15, where the numbering of the line running West resumes again with No. 27 to 42. Returning again to station 15, surface conditions made it advisable to drop one station South before continuing East. Here the numbering again picks up with 43 and continues to 50. Bear this map and station numbers in mind when referring to the cross section graphs shown below.

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Of the three types of surveys used only the Reconnaisance is illustrated here. If the Reconnaisance reveals a promising structure, a Detailed General Survey may be done. In the case of a salt dome, this requires 8 lines of soil samples to be taken in a pattern resembling spokes radiating from a wheel, the hub being the estimated center of the dome which is picked roughly from the original work. The subsurface mapping from this survey gives the operator a picture of the edges of the dome and its producing zones. Good results are obtained under all terrain conditions . . . even in swamps and from samples taken under water in the Gulf.

As a final step, where much faulting is indicated, a Detailed Structural Survey is used. This is done by running 8 additional lines, giving a total of 16 radial lines of samples which enables our interpreters to make subsurface maps showing faultings and fracture zones with detailed accuracy.

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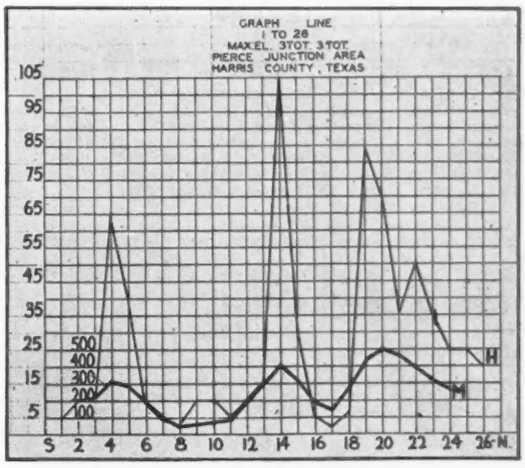
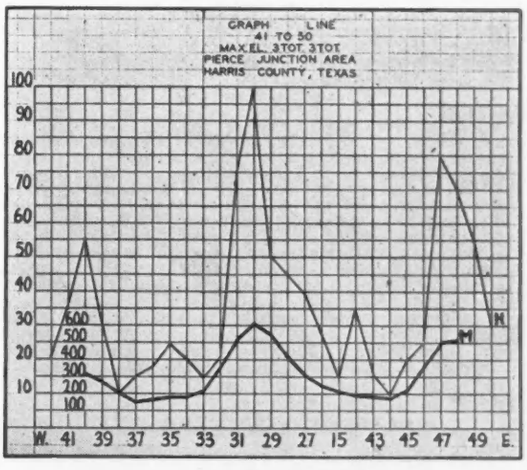


★ **GRAPH No. 1**



★ **GRAPH No. 2**

GRAPH (1) shows in line "H" the relative hydrocarbon content of North and South soil samples 1 to 26 (see numbers across bottom and map above). The numbers up the side are index figures. Line "M" is the mathematical curve. The use of both curves makes for accurate interpretative work. GRAPH (2) is similar, but shows the East and West line of soil samples.

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gas, mud and salt water; abn January, 1938. Sun Oil Co.'s Lutcher-Moore 1, 1-8s-13w, gas odors 6312 ft, 7336 ft, 7469 ft, salt water sands 9480 ft, abn June, 1938. **Principal Leaseholders:** D & D Oil Co. (Bill Minchen and Lee Harmer), Sun Oil Co., Federal Petroleum Co., The Texas Co. **Remarks:** D & D Oil Company leased the Lutcher-Moore acreage in three blocks in Calcasieu and Beauregard Parishes. Block 2 is in 15-6s-13w and Block 3 is around Section 34-5s-13w. Sometimes referred to as Lunita.

SABINE TRAM* (Block 3)

Adjoining Sabine River around Section 25-8s-14w. **Means of Discovery:** Reflection seismograph, Republic Production Co., 1936, 1937. **Extent of Development:** Republic's Sabine Tram 1, tried to blow out 9620 ft, drill pipe stuck 9620 ft, abn Jan., 1938. Operators were working over well in July, 1938. **Principal Leaseholder:** Republic. **Remarks:** See Sabine Blocks in Texas Gulf Coast. **Heaving Shale:** Was found in Sabine Tram 1 around 9600 ft.

SOUTH LAKE CHARLES*

Centering around T10 11s, R8 and 9w. **Means of Discovery:** Shell Petroleum Corp. worked acreage centering around 9-11s-8w, with reflection seismograph and torsion balance in 1935. Centering around Section 1-11s-9w, Union Sulphur Co. worked with reflection seismograph and torsion balance in 1935 and retained a large block. Centering around Section 10-11s-9w, Stanolind Oil & Gas Co. took a large block after working with reflection seismograph in 1935. **Extent of Development:** Shell farmed out acreage to Union Sulphur Co., which drilled Wurmnest 1 to 9250 ft, abn Sept., 1936. Union Sulphur Co. drilled Prairie Land Co. 1, 1-11s-9w, quit in shale at 9041 ft, Sept., 1936. Stanolind Oil & Gas Co. drilled Prairie Land Co. 1 and abn at 9120 ft, Aug., 1937. **Principal Leaseholders:** Shell Petroleum Corp., Stanolind Oil & Gas Co. and Union Sulphur Co. Several major and independent oil companies have checkerboard acreage. See Southeast Lake Charles.

SOUTH SULPHUR*

Four mi s of Sulphur, centering 10-10s-10w and in 10s-9w. **Means of Discovery:** Several shallow wells by Union Sulphur Co. and reflection seismograph, 1937. **Extent of Development:** One shallow well showed oil. After geophysical work, Union Sulphur's Bell 1, 10-10s-10w, fresh water sands 7828-33 ft, abn 8473 ft, Nov., 1937. Same operator's American Oil and Sulphur Co. 1, 16-10s-10w, dry 8002 ft, Jan., 1938. **Principal Leaseholders:** Union Sulphur Co., Stanolind Oil & Gas Co.

SOUTHEAST LAKE CHARLES*

Southeast of Lake Charles, centering around Section 30, 21-10s-8w, 10s-7w. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1936. Gulf Oil Corp., torsion balance and gravity meter, 1937. Later worked by Union Sulphur Co. after taking leases from W. D. Warner. **Extent of Development:** Union Sulphur Co.'s Irwin 1, 10-10s-8w, abn 8472 ft, Jan., 1937. **Principal Leaseholders:** Humble, Gulf Union Sulphur Co. **Remark:** See East Lake Charles.

STARKS

Sections 19, 20, 30-9s-12w. **Means of Discovery:** Refraction seismograph, Gulf Refining Co. 1925. **Discovery Well:** Gulf's Lutcher Moore 4, 2500 bbls, 4249 ft, February, 1927. **Structure:** Salt dome, top cap rock 1228 ft, salt 2218 ft. **Producing Formations:** Cap rock and sands at 525 to 1500 ft, Miocene and Oligocene sands 3025, 3422, 3721 ft, and 4100 to 4800 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 95; 75 developed. **Daily Production, July 1, 1938:** 583 bbls. **Estimated Ultimate Recovery:** 4,000,000 bbls. **Production Through June, 1938:** 2,476,790 bbls. **Indicated Remaining Reserves:** 1,523,210 bbls. **Deepest Hole:** Gulf's Industrial Lbr. Co. 13, 7207 ft, abn in heaving shale. **Casing Program:** Gulf, 6⅝-in from 527 to 4800 ft. **Oil Outlets:** Gulf Pipe Line Co., 6-in. **Range of Gravity:** 18-31. **Rigs Running July 1, 1938.** One. **Principal Leaseholders:** Gulf Oil Corp., Standard Oil Co. of La., jointly, J. R. Turnbull. **Heaving Shale:** Below 6000 ft.

SULPHUR

Sections 20, 32, 29-9s-10w. **Means of Discovery:** Oil seepage and surface elevation. **Discovery Well:** Union Sulphur Co.'s Fee 719, Dec. 24, 1926, 400 bbls 21.5 gravity oil daily, 3412 ft. **Structure:** Salt dome, top of cap rock 375 ft, salt 1460 ft. **Producing Formations:** Miocene-Oligocene sands at 2625 to 5187 ft; Middle Oligocene at 5000 to 6715 ft. **Average Sand Thickness:** 100 ft. **Productive Acres:** 200; 150 developed. **Daily Production, July 1, 1938:** 2992 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production Through June, 1938:** 11,965,291 bbls. **Indicated Remaining Reserve:** 8,034,709 bbls. **Deepest Hole:** Union Sulphur Co.'s Fee 762, dry at 9250 ft in salt, April, 1931. **Casing Program:** Union Sulphur Co., 10 or 10¾-in, 1000 ft; 7-in, 3100 to 5167 ft. **Oil Outlet:** Gulf Refining Co., 6-in. Union Sulphur has line to Rose Bluff. **Range of Gravity:** 19-36. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Union Sulphur Co. fee lands. **Remarks:** Sulphur discovered in 1868; wells listed include only tests made for oil after 700 sulphur tests were dr operations. First sulphur production on coast and long world's most important supply, yielding 10,000,000 long tons 1903-1924. Frosch method of extracting sulphur from cap rock was perfected here.

VINTON

Sections 3, 4-11s-12w; 32, 33, 34, 35-10s-12w. **Means of Discovery:** Oil and gas seeps; surface elevation. **Discovery Well and Date:** Sabine Oil & Mineral Co.'s Johnson-Vincent 1, June 25, 1910, 60 bbls daily, 2230 ft. **Structure:** Overhanging type salt dome, top of cap rock 428 ft, salt 925 ft. **Producing Formations:** Pliocene-Miocene sands at 1872 to 3600 ft; Oligocene at 3450 to 3500 ft; and Lower Oligocene at 3650 to 3974 ft. **Average Sand Thickness:** 90 ft. **Productive Acres:** 270. **Daily Production, July 1, 1938:** 1310 bbls. **Estimated Ultimate Recovery:** 50,000,000 bbls. **Production Through June, 1938:** 42,824,749 bbls. **Indicated Remaining Reserve:** 7,175,251 bbls. **Deepest Hole:** Superior Oil Co.'s Gray 1, 4-11s-12w, 7⅝-in, 5916 ft, dry 6339 ft, November, 1937. Reported to be abn in salt. **Oil Outlet:** Trucks. **Range of Gravity:** 3100 ft, 20 gravity; 3200 to 3950 ft, 33 gravity. **Rigs Running July 1, 1938.** None. **Principal Leaseholders:** Gulf Oil Corp., Vinton Petroleum Co., Edgerly Petroleum Co., The Texas Co., Seiss Oil Synd., Marrs McLean, Wilson-Broach Oil Co., Trio Oil Co., Superior Oil Co. **Heaving Shale:** Found around 4030 ft. Over 800 ft of the formation has been penetrated, and operators have been unable to get through the Lower Oligocene.

*Prospect. †Salt dome, no production. ‡Gas field.

CAMERON PARISH

BIG LAKE

East of East Hackberry field, across Calcasieu Lake, centering Section 18-12s-8w, 13-12s-9w. **Means of Discovery:** Reflection seismograph, Magnolia Petroleum Co., 1934. **Discovery Well:** Magnolia's Broussard 1, dr to 9500 ft, pb and perforated 8020 to 8026 ft, estimated 35,000,000 cubic ft of gas with small amount of 49.7-gravity distillate. Hole pb and perforations from 7944 to 7966 ft, gas and distillate, Dec. 24, 1935. First commercial oil well, Union Sulphur Co.'s Hebert 1, 18-12s-8w, May 5, 1937, 8336 ft, 550 bbls 38.9 gravity oil daily. Started making salt water, was pb and perforated 8324 to 8229 ft, 25 bbls hour through ¼-inch choke. **Type Structure:** Deep seated salt dome. **Producing Formations:** Oligocene sands at 6779-83 ft; 7944 to 7966 ft; 8226 to 8229 ft; 8326 to 8334 ft; 9040 to 9060 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 150; 50 developed. **Daily Production, July 1, 1938:** 70 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 65,574 bbls. **Indicated Remaining Reserves:** 934,426 bbls. **Deepest Hole:** Magnolia's Broussard 1, 13-12s-9w, 9501 ft, November, 1935, pb comp as discovery well. **Casing Programs:** Magnolia, 18⅝-in, 60 ft; 7-in, 8600 ft. Union Sulphur Co., 10-in, 1560 ft; 7-in from 8400 to 9200 ft. **Oil Outlets:** Barge. **Gravity Oil:** 6779-83 ft, 40.7; 8000 ft, 49 gravity; 8336 ft, 38.9 gravity. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Magnolia, Union Sulphur Co., Stanolind Oil & Gas Co. **Remarks:** Magnolia leased approximately 11,000 acres in this area which takes in Willow Lake. Union Sulphur made a deal with Magnolia Petroleum Co. for acreage and agreed to drill three wells.

BLACK BAYOU

Sections 7, 8, 17, 18-12s-12w. **Means of Discovery:** Surface indications; seismograph, Shell Petroleum Corp., 1927. **Discovery Well and Date:** Shell's Watkins 9, swabbed 29 bbls 19.6 gravity oil daily, 981 ft, April 15, 1929. **Structure:** Salt dome, top cap rock 884 ft, salt 1701 ft. **Producing Formations:** Miocene sands at 965 to 981 ft and 3897 to 4727 ft; Middle Oligocene at 5000 to 5100 ft; 5118 to 5263; 6195 to 6228 ft; and 6619 to 6638 ft. **Average Sand Thickness:** 110 ft. **Productive Acres:** 220; 180 developed. **Daily Production, July 1, 1938:** 3631 bbls. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production Through June, 1938:** 5,366,988 bbls. **Indicated Remaining Reserve:** 4,633,012 bbls. **Deepest Hole:** Shell's State Lands 3, dr to 6905 ft, showed sand with oil around 6400 ft, and then used hole for experimental work with perforations, was finally abn September, 1935. **Casing Programs:** Shell, 16-in, 90 ft; 10¾-in, 1400 to 1500 ft; 7-in, 3800 to 6600 ft. **Oil Outlets:** Barge. **Range of Gravity:** 18-23. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** Shell, Brownie-Babbette Oil Co. **Heaving Shale:** Found under Section 17-12s-12w, around 6413 ft.

CALCASIEU LAKE†

In Calcasieu Lake, one mi w of Section 36-13s-9w. **Means of Discovery:** Seismograph, Louisiana Land & Exploration Co., 1927. **Structure:** Salt dome, top cap rock 1490 ft, top salt 2345 ft. **Extent of Development:** Nine dry tests, through 1935. **Deepest Hole:** The Texas Co.'s Jessen 1. (See St. John Island). **Principal Leaseholder:** The Texas Company.

CAMERON*

South of Calcasieu Lake, centering Section 29-15s-10w. **Means of Discovery:** Reflection seismograph, Southern Sulphur Co., 1932. **Extent of Development:** Southern Sulphur Co.'s Gulf of Mexico 1, quit at 3200 ft, June, 1934; State 2, quit at 2611 ft, June, 1937. **Principal Leaseholders:** Southern Sulphur Co., Stanolind Oil & Gas Co.

CAMERON MEADOWS

Sections 15, 16, 21-14s-13w. **Means of Discovery:** Gas seeps; seismograph and torsion balance, Vacuum Oil Co., 1929. **Discovery Well:** Vacuum's Cameron Meadows Ln. Co. 1, spray of 30 gravity oil, 3850 ft Jan. 20, 1931. First commercial well, Vacuum's No. 2, Section 21, 2400 bbls 41 gravity oil daily, ½-inch choke, Miocene sand, 5263-5273 ft, Oct. 10, 1931. **Structure:** Salt dome, top salt around 6200 ft. **Producing Formations:** Miocene sands at 3327 to 4969 ft and at 5235 to 5273 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 350; 230 developed. **Daily Production: July 1, 1938:** 3697 bbls. **Estimated Ultimate Recovery:** 15,000,000 bbls. **Production Through June, 1938:** 5,650,485 bbls. **Indicated Remaining Reserve:** 9,349,515 bbls. **Deepest Hole:** The Texas Co.'s Miami Fee 1, dr to 9331 ft in salt. Top salt 9318 ft, pb 4200 ft, perforated csg, came in for oil producer from shallow sand. **Casing Programs:** Burton Sutton, 10-in, 970 ft; 7-in, 3600 to 5200 ft. **Oil Outlet:** Barge. **Range of Gravity:** 3300 to 4100 ft, 22 to 27 gravity. **Rigs Running, July 1, 1938:** Three. **Principal Leaseholders:** Humble Oil & Refining Co., Burton Sutton Oil Co., Magnolia Petroleum Co., The Texas Co.

CATFISH LAKE*

Centering Section 8-14s-5w, 7-14s-6w. **Means of Discovery:** Reflection seismograph, Pure Oil Co., 1925; Humble Oil & Refining Co., torsion balance and seismograph, 1935 and 1936. **Extent of Development:** Humble's Miami Corp. 1, dr to 10,177 ft, pb to

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PP8-1

7849 ft, abn January, 1938; Miami Corp. 1-B, 7-14s-6w, oil odor 5600 ft, 9⅝-in csg 7398 ft, salt water sand 8650 ft, dr to 10,895 ft, abn June, 1938. Ash Robinson's Mermentau Land and Minerals 1, 30-14s-6w, abn 6530 ft, July, 1938. **Principal Leaseholders:** Humble, Shell Petroleum Corp. **Remarks:** Was called Lake Misere in 1936 Gulf Coast issue. Also referred to as Premo or Little Cheniere area.

CHAKLEY*

Eight mi ne Sweet Lake field, centering Sections 522-12s-6w, 34-11s-6w, and 28-11s-7w. **Means of Discovery:** Torsion balance, reflection seismograph, Humble Oil & Refining Co., Gulf Refining Co., 1934. Shell, 1937. **Extent of Development:** Humble's Bell Hanszen 1, oil and gas show 8638 to 8656 ft, showed saturation at 8588 to 8591 ft, salt water sand 9580 ft, abn 9628 ft, Aug. 11, 1937. Shell Petroleum Corp.'s Hanszen 1, 22-12s-6w, was abn lcn. Humble's Hanszen 2, 9-12s-6w, setting 9⅝-in, 8695 ft, July 1, 1938. **Principal Leaseholders:** Humble (7000 acres), Sun Oil Co., Harrison & Abercrombie, Gulf, Shell, Stanolind Oil & Gas Co. **Heaving Shale:** In Bell Hanszen 1, at 8946 ft, hole heaved at 8871 ft and 13 pound mud was used. **Remarks:** Also is known as Southwest Hayes or Hanszen.

CREOLE

One mi offshore of Cameron Parish and Sections 4-15s-8w, in Gulf of Mexico. **Discovery Means:** Reflection seismograph. Superior Oil Co. and Pure Oil Co. 1933 and 1934. **Discovery Well and Date:** Superior and Pure's State 1, Jan. 11, 1938, 10 bbls per hour, 33.9 gravity oil, 7/64-inch choke; later killed and screen set. Jan. 22, 1938, came in 10 bbls per hour, 16/64-inch choke. **Type Structure:** Dome. **Approximate Elevation:** Sea level. **Producing Formations:** Miocene sands 5110 to 5130 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 221 bbls. **Estimated Ultimate Recovery:** 2,000,000 bbls. **Production Through June, 1938:** 23,416 bbls. **Indicated Remaining Reserve:** 1,976,584 bbls. **Deepest Hole:** Superior's Sells 1, n of discovery well, 5-15s-8w, missed prod sand dr 9895 ft, July, 1938. **Casing Programs:** Superior Oil Co., 10¾-in, 1157 ft; 7⅝-in, 7166 ft. **Oil Outlets:** Barge. To lay line out to well. **Gravity Oil:** 33.9. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Superior and Pure, 50-50 basis. **Remarks:** First oil field out in Gulf of Mexico.

EAST HACKBERRY

Sections 11, 12, 13, 14, 17, 19, 24, 27, 37, 36-12s-10w; 44, 46-12s-9w. **Means of Discovery:** Gas seeps; refraction seismograph, Calcasieu Oil Co., 1926. **Discovery Well and Date:** Calcasieu, Magnolia Petroleum Co. and Union Sulphur Co., Caldwell 2, 1000 bbls 3998 ft, Nov. 1927. **Structure:** Salt dome, top cap rock 2955 ft, salt 3588 ft. **Producing Formations:** Miocene-Pliocene sands at 2592 to 3046 ft; Miocene at 3800 to 4181 ft; Middle Oligocene 5481 to 5510 ft; 5797 to 6947 ft; Oligocene sands at 7277, 7325, 7490, 7598, 7664 ft, (oil shows 8320-8330 ft). **Average Sand Thickness:** 60 ft. **Productive Acres:** 500; 460 developed. **Daily Production, July 1, 1938:** 6689 bbls. **Estimated Ultimate Recovery:** 35,000,000 bbls. **Production Through June, 1938:** 20,155, 415 bbls. **Indicated Remaining Reserve:** 14,844,585 bbls. **Deepest Hole:** Gulf Oil Corp.'s Irwin 22, 12-12s-10w, gas odor 8207-12 ft, top salt 8505 ft, drilled to 8505 ft in salt, pb and abn June, 1936. **Casing Program:** The Texas Co., 10¾-in, 2120 ft; 7-in, 7600 ft. **Oil Outlet:** Barge. **Range of Gravity:** 3981 ft, 24.3 gr.; 5900 and 6150 ft, 26.7 gr.; 7500 to 7600 ft, 30 to 31 gr. **Rigs Running, July 1, 1938:** Three. **Principal Leaseholders:** Calcasieu Oil Co., Stanolind Oil & Gas Co., The Texas Co., Union Sulphur Co., Gulf Oil Corp. **Remarks:** Union Sulphur Co. has a small repressuring plant on edge of dome. Gas is pumped into Humble 8 at a pressure of 2280 pounds. **Heaving Shale:** Around 4750 ft and 7980 ft. Over 1200 ft of shale has been penetrated.

GULF OF MEXICO BLOCK "2"

Off shore of Cameron Parish and Section 24-16s-6w. **Means of Discovery:** Reflection seismograph, Pure Oil Company and Superior Oil Company 1936 and 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** Pure Oil Co. and Superior Oil Co. 50-50 basis. **Remarks:** This block was taken when the operators took the Creole block from Southern Sulphur Company (Col. Simms). See Creole.

HACKBERRY

Sections 16, 17, 20, 21, 22, 23, 27, 28, 29, 30-12s-10w. **Means of Discovery:** Elevation, gas seepage; paraffin dirt. **Discovery Well and Date:** Cameron Oil Co.-Rycade Oil Corp.'s Duhon 1, 200 bbls, 22 gravity, 3154 ft, Dec. 1 1928. **Structure:** Salt dome, top cap rock 1650 ft, salt 2078 ft. **Producing Formations:** Miocene-Pliocene sands at 2950 to 3250 ft; 3275 to 3633 ft; 3850 ft; 3903 to 3909 ft; 4160 to 4172 ft; 4276 to 4330 ft; 4340 to 4690 ft; 4764 to 4775 ft; 4843 to 4875 ft; 5660 ft; 5850 to 5862 ft; 5912 to 5996 ft; 6235 to 6240 ft. Southwest flank, 6480-6525 ft. **Average Sand Thickness:** 35 ft. **Productive Acres:** 200; 160 developed. **Daily Production, July 1, 1938:** 3834 bbls. **Estimated Ultimate Recovery:** 12,000,000 bbls. **Production Through June, 1938:** 4,405-050 bbls. **Indicated Remaining Reserve:** 7,594,950 bbls. **Deepest Hole:** Federal Petroleum Co.'s Hebert 1, 7834 ft, heaving shale, dry, Sept., 1935. **Casing Programs:** Stanolind Oil & Gas Co., 16-in 130 ft; 10¾-in, 1200 to 1700 ft; 7-in, 4200 to 4900 ft. W. T. Burton, 16-in, 45 ft; 10¾-in, 1600 ft; 7-in 4200 to 4500 ft. Superior, 11¾-in, 950 ft; 7-in, 6287 ft. **Oil Outlets:** Barge. **Range of Gravity:** 3200 to 3250 ft, 21 gr.; 3300 to 5990 ft, 31 and 32 gr.; 6480-6525, 38 gr. **Rigs Running, July 1, 1938:** Four. **Principal Leaseholders:** Stanolind Oil & Gas Co., Gulf Oil Corp., Humble Oil & Refining Co., Pure Oil Co., Rycade Oil Corp., Sunshine Oil Co., Moon Oil Co., Cameron Oil Co., Union Sulphur Co., R. E. Seiss, J. G. Sutton, Burton, Superior Oil Co. **Remarks:** This is considered a twin dome with East Hackberry, being the w uplift of a salt mass underlying both fields. Mathieson Alkali Works takes brine from this field. Superior discovered a new sand on the sw flank of dome in 1938. **Heaving Shale:** Around 7500 ft.

JOHNSON'S BAYOU*

South of Sabine Lake, centering Sections 1, 10-15s-15w, and 8 and 16-15s-14w. **Means of Discovery:** Surface indications; reflection seismograph, Magnolia Petroleum Co., 1935. Reflection Seismograph, Humble Oil & Refining Co., 1935. **Extent of Development:** Yount-Lee Oil Co.'s Stark 1, quit at 7657 ft, January, 1930. Humble-Sun's Peterson 1, 6-15s-14w, dry, 5287 ft, 1926. Magnolia's Johnson Bayou School Land 1, slight show of oil 4747 to 4759 ft, odor gas 8207 to 8217 ft, gas show 5759 to 5765 ft, heaving shale 9180 ft. DST 9180 ft, showed salt water in 20 minutes, 2400 pressure, abn Nov. 11, 1936. Magnolia's Grey 1, 8-14s-15w, drill to 7421 ft, hole off vertical, abn March 1937; A. Dobertine 1, 9-15s-14w, quit in shale at 8309 ft, May, 1937. **Principal Leaseholders:** Magnolia Petroleum Co., Stanolind Oil & Gas Co., Humble. **Heaving Shale:** Was found in Johnson Bayou School Land 1 at 9180 ft.

MALLARD BAY*

On Mallard Bay and e of Grand Lake centering Sections 4, 5, 9, 14, 16 and 22 13s-3w; 31, 32-12s-3w. **Means of Discovery:** Reflection Seismograph, Shell Petroleum Corp., 1928. Torsion balance and reflection seismograph (2 to 12-12s-3w), Humble Oil & Refining Co., 1934. Reflection seismograph, Pure Oil Co., 1934, 1936. **Extent of Development:** Shell's Mareaux 1, 32-12s-3w, dry 7229 ft, 1930. Pure Oil Co.'s State 1, 22-13s-3w, oil odor 4869 to 4874 ft, 9⅝-in csg at 7906 ft, stuck drill pipe at 10,146 ft, pb 6923 ft, perforated csg 5945 to 5955 ft, 10 shots, DST showed oil, gas, mud, and salt water. Perforated 5763 to 5768 ft, showed salt water, abn March, 1937. State 2, drilled to 9445 ft, blew out, made gas, salt water, and sand, abn October, 1937. North of Mallard Bay, Pure's Calcasieu National Bank 1, 18-12s-4w, dr shale 6580 ft, July, 1938. **Principal Leaseholders:** Shell, Pure, 15,000 acres, 10 year paid up lease.

MUD LAKE*

Sections 28, 29, 32, 39-14s-11w. **Means of Discovery:** Reflection seismograph, Gulf Refining Co., 1927. Reflection seismograph, Pan American Production Co., 1935. Geophysical work by Humble, 1937. **Extent of Development:** Pan American's Lutcher-Moore 1, 14s-11w, quit at 9227 ft, January, 1936. **Principal Leaseholder:** Harry Hanszen.

ST. JOHN'S ISLAND*

Centering Section 23-14s-10w. **Means of Discovery:** Torsion balance, Fohs Oil Co. Seismograph, The Texas Co. **Extent of Development:** The Texas Co.'s Jessen 1, slight show of oil, 7358 ft, quit 9030 ft, April, 1935. **Principal Leaseholder:** Fohs Oil Co. **Remarks:** Sometimes referred to as Lower Calcasieu Lake.

SWEET LAKE

Section 12-13s-8w. **Means of Discovery:** Gas seepages. **Discovery Well and Date:** Pure Oil Co.'s Sweet Lake 1, blew out and cratered at 4502 ft, 1926. Sweet Lake 2, flowed 193 bbls daily from

*Prospect. †Salt dome, no production. ‡Gas field.

SALT DOME OIL CORP.

Esperson Bldg.
Houston, Texas

July 15, 1938.

The OIL WEEKLY,
Houston, Texas.

Gentlemen:

We wish to take this occasion to express our appreciation of the constructive editorial effort which has been carried on by The OIL WEEKLY in the interest of conservation, in the interest of protecting the oil industry against exorbitant taxes, and in the interest of disseminating information of genuine value to the industry as a whole.

We feel that a more fitting time could not be selected to express these sentiments to you than at this time when you have ready for publication the Gulf Coast Issue of The OIL WEEKLY.

Your sectional editions have contained splendid compilations of data, and we are sure that your 1938 Gulf Coast Edition will be no exception.

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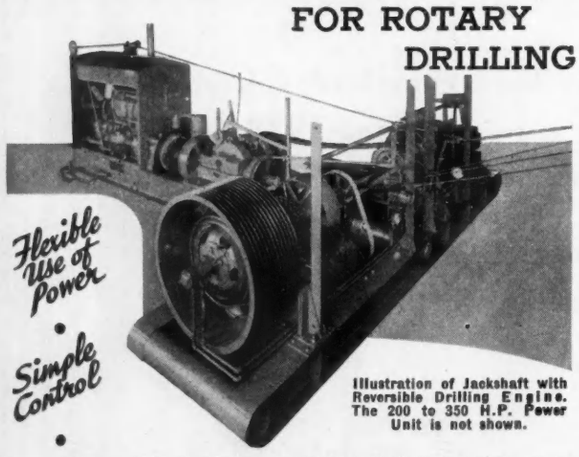

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5195 ft, 1927. **Structure:** No salt dome material encountered, although regarded as possible deep seated salt dome. **Producing Formations:** Miocene sands at 4457 to 4594 ft; 5125 to 5897 ft; 6362 to 6367 ft; 6552 to 6562 ft; 6784 to 6813 ft; sands at 7366 to 7387 ft. **Average Sand Thickness:** 45 ft. **Productive Acres:** 100; 70 developed. **Daily Production, July 1, 1938:** 1017 bbls. **Estimated Ultimate Recovery:** 6,500,000 bbls. **Production through June, 1938:** 3,720,215 bbls. **Indicated Remaining Reserves:** 2,779,785 bbls. **Deepest Hole:** Pure's Stanolind 13, wo, dr to 8928 ft, tested salt water in lower horizons was comp as gas well at 6552-62 ft, March, 1938. **Casing Programs:** Pure Oil Co., 18⅝-in, 1400 ft; 8¼-in, 4500 to 7500 ft. **Oil Outlets:** Barge. **Gravity Oil:** 28.8. **Rigs Running, July 1, 1938,** None. **Principal Leaseholders:** Pure Oil Co., Stanolind Oil & Gas Co. **Heaving Shale:** Below 6500 ft.

WILLOW LAKE*

Centering Section 32-12s-8w. **Means of iDscovery:** Geophysics, Magnolia Petroleum Co., 1934. **Extent of Development:** Magnolia's Miama 1, 32-12s-8w, abn 8490 ft, March, 1936. **Principal Leaseholder:** Magnolia.

EAST BATON ROUGE PARISH

UNIVERSITY—SOUTH BATON ROUGE

South of Baton Rouge, centering around Section 65-7s-1w. **Discovery Means:** Reflection seismograph, Hoard Exploration Co., 1935, for Superior Oil Co. Later for William Helis. **Discovery Well:** Louisiana Crusader and William Helis' Duplantier 1, 520 bbls daily, 33.2 gravity, 3/16-in choke, 6477 ft, Jan. 21, 1938. **Type Structure:** Dome. **Producing Formations:** Miocene sands 6471 to 6477 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 285 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 34,461 bbls. **Indicated Remaining Reserve:** 965,539 bbls. **Deepest Hole:** Superior's Duplantier Community 1, 65-7s-1w, dr to 10,360 ft, Oct., 1935; had several oil and gas shows between 6200 to 8600 ft, good show oil in Marginulina at 8534 to 8588 ft, with lower section salt water. Pb and perforated at 6500 to 6505 ft, showed 33 gravity oil, gas and salt water, abnd. **Casing Programs:** Louisiana Crusader Oil Co., 10¾-in, 2080 ft; 7-in, 6472 ft. **Oil Outlet:** Barge. **Gravity Oil:** 32.2. **Principal Leaseholders:** William Helis, Louisiana Crusader, Superior.

EAST FELICIANA PARISH

CLINTON*

Near town of Clinton, centering Section 69-2s-3e. **Means of Discovery:** Geophysics, 1936. **Extent of Development:** G. C. Koch et al's Andrews 1, reported gas show 4141 ft, topped Cockfield, 5889 ft, abn 6132 ft, July, 1937.

JACKSON*

Centering around Section 34-2s-1w. **Means of Discovery:** Geophysics, Barnett Petroleum Co., 1936. **Extent of Development:** Barnett Petroleum Co.'s Tullos 1, dry at 6500 ft, March, 1937, topped Cockfield at 6262 ft. **Principal Leaseholder:** Barnett.

SLAUGHTER*

Southeast of Slaughter, centering Section 16-4s-1e. **Means of Discovery:** Reflection seismograph, 1937. Core drilling. **Extent of Development:** Cavalier Oil Co. drilled a number of shallow holes. **Remarks:** Continental Oil Co. dropped acreage in area after geophysical work.

EVANGELINE PARISH

BAYOU CHICOT*

Northeast of Pine Prairie, centering Section 2-3s-1e. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co. and Louisiana Crusader Oil Co., 1935, 1936, 1937. **Extent of Development:** La. Crusader's Hass 1, dry at 7506 ft, March, 1937, in Cockfield. **Principal Leaseholders:** Texas Co., Tide Water Oil Co., Humble Oil & Refining Co., Gulf Oil Corp. **Remarks:** Also known as Chico.

CHATAIGNIER*

Near the town of Chataignier, centering Section 34-5s-1e. **Means of Discovery:** Torsion balance, Gulf Oil Corp., 1936. **Extent of Development:** Undrilled. **Principal Leaseholders:** Gulf Oil Corp., Stanolind Oil & Gas Co., Sun Oil Co., Felmont Oil Corp., Kirby Petroleum Co.

EAST VILLA PLATTE*

East of Villa Platte field, centering Section 61-4s-3e. **Means of Discovery:** Torsion balance, Perry Scranton, 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** Perry Scranton, Tide Water Associated Oil Co.

NORTH BASILE*

Northeast of Basile, centering Section 14-6s-2w. **Means of Discovery:** Magnetometer, Frank Muckfer. Torsion balance, Stano-

*Prospect. †Salt dome, no production. ‡Gas field.

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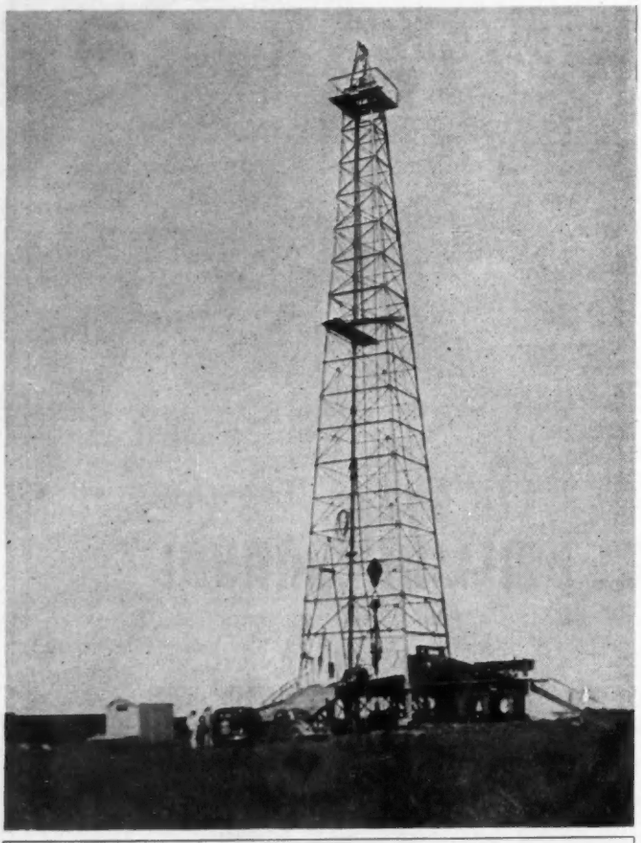

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lind Oil & Gas Co., 1934; seismograph, 1935. **Extent of Development:** Basile Oil Co.'s Hirsch 1, 14-6s-2w, show oil and gas, 6994-7052 ft and 7534 ft; topped sand 7185 ft, show oil 6994-7052 ft and 8046-50 ft on ether test, one foot gas sand 8050-59, quit at 8438 ft, March, 1936. **Principal Leaseholders:** Stanolind, W. Williams et al.

PINE PRAIRIE

Sections 35, 36-3s-1w. **Means of Discovery:** Outcrop of limestone of cap rock. **Discovery Well:** Myles Mineral Co.'s No. 8, 1912, 1000 bbls, 1300 ft. **Structure:** Salt dome, cap rock at surface, top salt 516 ft. **Producing Formations:** Cap at 1300 ft and Miocene at 2340 ft. **Productive Acres:** 25. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** 20,000 bbls. **Production Through 1935:** 20,000 bbls. (Field has been abnd.) **Indicated Remaining Reserve:** None. **Deepest Hole:** Schlicher Prod. Co.'s LeDenois Land and Stone Co. 1, dry, 5916 ft, January, 1938. **Rigs Running July 1, 1938:** None. **Principal Leaseholder:** Schlicher Prod. Co. **Remarks:** Cap rock is quarried from this dome.

REDDELL*

Three mi n and e Reddell, centering Sections 18, 22-4s-1w. **Means of Discovery:** Surface indications, gravity meters, reflection seismograph, torsion balance, pendulum, Humble Oil & Refining Co., 1934. Reflection seismograph, Continental Oil Co., 1936. **Structure:** Indicated dome formation or some unusual sub-surface structure. **Extent of Development:** Humble's Haas 1, 22-4s-1w, showings of oil between 6627-31 ft, abnd 8014 ft. in Vicksburg, 1935. Continental-Humble's Pardee Lumber Co. 1, 18-4s-1w, topped Vicksburg 7080 ft, dry 8875 ft, May, 1937, in Upper Cook Mountain. **Principal Leaseholders:** Humble, Continental Oil Co., Sun Oil Co., Stanolind Oil & Gas Co.

SOUTH VILLA PLATTE*

South of Villa Platte, centering Section 48-4s-1e. **Means of Discovery:** Reflection seismograph by Tide Water Oil Co., 1937, failed to indicate structure and acreage was dropped in 1937. **Extent of Development:** Undrilled.

VILLA PLATTE

Six mi n of Villa Platte, centering around Sections 44, 45, 46-3s-2e. **Means of Discovery:** Surface indications, reflection seismograph and torsion balance, Continental Oil Co., 1936. **Discovery Well:** Continental Oil Co.'s F. Tate 1, 177 bbls 52.4 gravity oil daily, 3/16-in choke, Sept. 17, 1937, 9035 ft. **Type Structure:** Dome. **Producing Formations:** Sparta of Cook Mountain, 8982 to 9076 ft. **Average Sand Thickness:** 63 ft. **Productive Acres:** 500; 150 developed. **Daily Production, July 1, 1938:** 3561 bbls. **Estimated Ultimate Recovery:** 15,000,000 bbls. **Production Through June, 1938:** 303,492 bbls. **Indicated Remaining Reserve:** 14,696,508 bbls. **Deepest Hole:** Continental's J. E. Vidrine 1, 47-3s-2e, dr to 10,506 ft, pb and was testing at 8980 ft, July, 1938. **Casing Programs:** Continental Oil Co., 20-in, 77 ft; 10-in, 2450 ft; 7-in, 9050 ft. **Oil Outlet:** Continental Oil Co.'s 6-in to Tepetate. **Gravity Oil:** 9000 ft, 41 to 63.8 degrees. **Rigs Running, July 1, 1938:** Four. **Principal Leaseholders:** Continental Oil Co. (7000-ac), Amerada Pet. Corp. **Remarks:** Continental's Tate 1 was the first well in South Louisiana to produce from Sparta formation and opened a new producing horizon along the Conroe trend.

IBERIA PARISH

AVERY ISLAND†

Sections 37, 38, 39, 53, 56-12s-5e; 55, 56, 57, 58, 59-13s-6e. **Means of Discovery:** Elevation above marshes. Rock salt found May 6, 1862, by John Marsh Avery. **Structure:** Salt dome, no cap rock, salt at 35 ft. **Extent of Development:** Through 1935, three tests, all dry. **Deepest Hole:** Louisiana Land & Exploration Co.'s Avery Isle 2, abnd 5873 ft 1928. **Remarks:** Salt mine. **Principal Leaseholder:** Surrounding dome and marsh lands Louisiana Land and Exploration Co. has all leases. This company outlined the dome in 1936 with geophysical work.

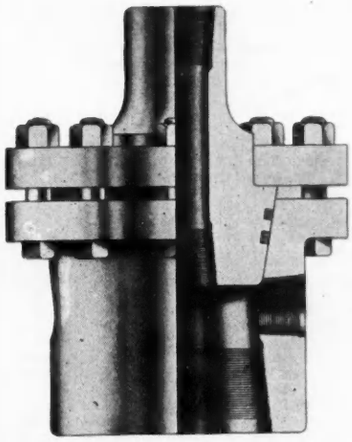
FAUSSE POINT

Sections 26, 27, 34, 35-11s-8e. **Means of Discovery:** Refraction seismograph, Gulf Refining Co., 1926. **Discovery Well:** Union Sulphur Co.'s Shaw Fee 1, 200 bbls., 1394 ft, Feb., 1927. See Remarks. **Structure:** Salt dome, top cap rock 800 ft, salt 850 ft. **Producing Formations:** Plio-Miocene sand and cap rock, 1123 to 1392 ft., 6384 to 6430 ft. Intervals in Miocene from 7939 to 9000 ft. **Average Sand Thickness:** Thin sand streaks with shale 6303 to 6553 ft. **Productive Acres:** Two wells. **Daily Production, July 1, 1938:** 21 bbls. **Estimated Ultimate Recovery:** No estimate. **Production Through June, 1938:** 62,520 bbls. **Deepest Hole:** The Texas Co.'s State 4, 35-11s-8e, oil odors 7912 ft, 8048 ft, 8100 ft, set 7⅝-in csg 9236 ft, tested from 7939-9000 ft, flowed 25 bbls and 1,000,000 cu ft gas daily. Total depth was 9345 ft. **Casing Programs:** The Texas Co., 18⅝-in, 90 ft; 13⅜-in, 1344 ft; 7-in, 6444 ft. **Oil Outlets:** Barge. **Range of Gravity:** 6300 ft, 34.6 grav. **Rigs Running July 1, 1938:** None. **Principal Leaseholders:** The Texas Co., Sun Oil Co., Magnolia Pet. Co. **Remarks:** Was called Loreauville and Eagle Point. The Texas Co.'s State 2, 35-11s-8e, dr to 7157 ft in salt, top 7151 ft. Perforated csg 6303 to 6553 ft, 250 shots, came in Feb. 16, 1937, 32 bbls 14 hours, 34.6 gr oil. Feb. 17, made 32 bbls daily by heads on ⅝-in choke.

JEFFERSON ISLAND

Immediate area of Lake Peigneur, centering around Section 58-12s-5e. **Discovery Means:** Elevation; rock salt found at 334 ft by Joe Jefferson, noted actor, 1895, The Texas Company outlined the structure with reflection seismograph in 1937. **Discovery Well:** Several deep wells drilled by Jefferson Lake Oil Co. showed oil but first commercial producer was The Texas Co.'s Bayless & Jones (Jefferson Island Salt Mining Co.) completed June 14,

*Prospect. †Salt dome, no production. ‡Gas field.



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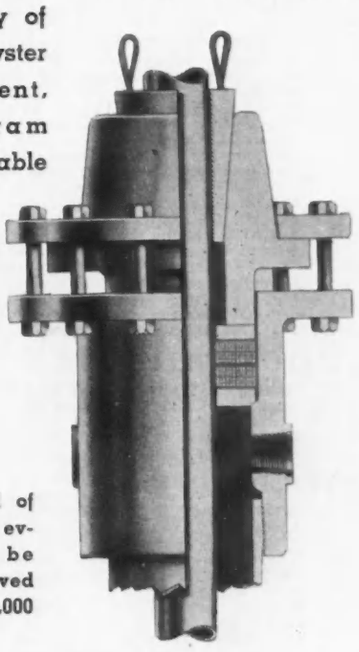

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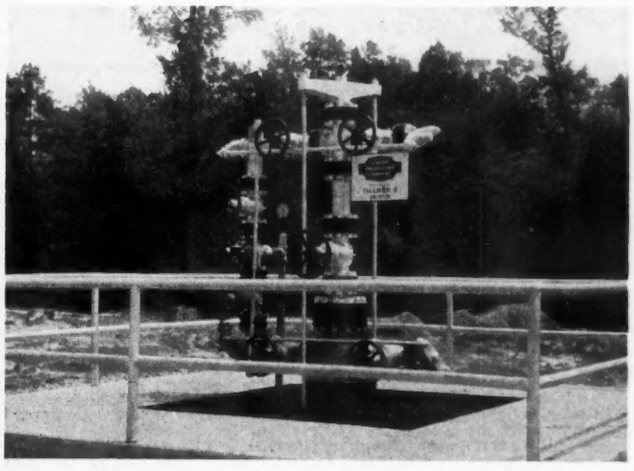

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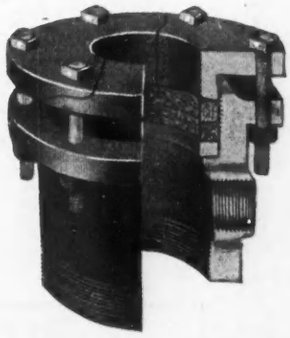

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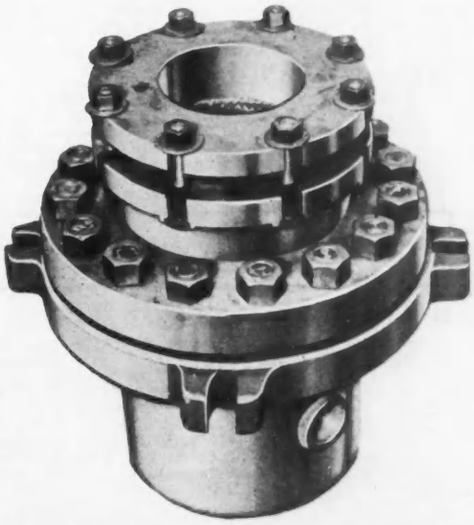

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1938, 500 bbls 37.5 gravity oil daily from 8170 to 8210 ft. **Type Structure:** Salt Dome; top cap rock 78 ft, top salt 80 ft. On east flank top salt 8683 ft. **Producing Formations:** Salt from salt plug and sulphur from cap rock over salt. Sulphur supply nearly exhausted. Oil produced from Miocene sands 8170 to 8210 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 100. 20 developed. **Daily Production, July 1, 1938:** 247 bbls. **Estimated Ultimate Recovery:** 500,000 bbls. **Production Through June, 1938:** 2964 bbls. **Indicated Remaining Reserve:** 497,036 bbls. **Deepest Hole:** See discovery well drilled to 9031 ft in salt, top 8683 ft, was plugged back and completed. **Casing Programs:** The Texas Co., 18⅝-in, 44 ft; 13⅜-in, 1399 ft; 9⅝-in, 8248 ft. **Oil Outlets:** Barge. **Gravity Oil:** 8170 to 8210 ft, 37.5 gravity. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Jefferson Lake Oil Co., The Texas Co. **Remarks:** Sulphur production ceased in 1936. The plant was moved to Texas. Several wells drilled by Jefferson Lake Oil Co. showed oil around 6576 ft and deeper.

NEW IBERIA

Sections 25, 26, 51, 53, 54, 56 and 71-12s-7e. **Means of Discovery:** Elevation, gas seepages, paraffin beds. **Discovery Well:** Gulf Refining Co. and New Iberia Oil Co.'s Boliver 1, 124 bbls, from cap rock, 1072-1078 ft, 1917. **Structure:** Salt dome, top salt 805 ft. **Producing Formations:** Cap rock at 1078 ft; Pliocene-Miocene sands at 1900 ft, 2631 ft, and 3100 ft. Miocene sands at 3828 ft, 4102 ft, 4373 to 4454 ft; 4516 to 4607 ft; 4736 to 4780 ft; 4812 to 5000 ft; 5056 to 5147 ft; 5385 to 5401 ft. Oligocene sands 6679 to 6728 ft; 6715 to 6732 ft. (Showings of oil and gas in Oligocene formation from 7548 to 7677 ft.) **Average Sand Thickness:** 50 ft. **Productive Acres:** 200. 175 developed. **Daily Production, July 1, 1938:** 15,050 bbls. **Estimated Ultimate Recovery:** 20,000,000 bbls. **Production Through June, 1938:** 11,847,018 bbls. **Indicated Remaining Reserve:** 8,152,982 bbls. **Deepest Hole:** The Texas Co.'s H. C. Hanszen 1, Section 54, quit at 7934 ft, in heaving shale, March, 1935. Topped Oligocene at 7548 ft, had sand showing oil 7637 to 7677 ft, show gas 7548 ft, top heaving shale 7778 ft. **Casing Programs:** The Texas Co., 18-in, 45 ft; 10¾-in, 850 ft; 7-in, 4000 to 5100 ft. Wm. Helis, 10¾-in, 895 ft; 5 or 7-in, 3900 to 5065 ft. Canal Oil Co., 18-in, 45 ft; 10¾-in, 870 ft; 7-in, 4000 to 5000 ft. **Oil Outlets:** Canal Oil Co.'s 6-in line to terminal. Standard of Louisiana's 8-in, Texas Pipe Line Co.'s 6-in. William Helis' 6-in to Bayou Teche, barge. **Range of Gravity:** From 3800 to 6700 ft, 22 to 32 gravity. **Rigs Running July 1, 1938:** Eight. **Principal Leaseholders:** Canal Oil Co., The Texas Co., Helis Oil Co., Harry Foditaos. **Remarks:** Was known as Little Bayou. Texas Co. discovered Oligocene production on nw flank from 6679-6700 ft June, 1936. **Heaving Shale:** Below 7778 ft.

PATOUTVILLE*

Section 35-12s-7e. **Means of Discovery:** Reflection seismograph, Louisiana Land & Exploration Co., 1935. **Extent of Development:** Hamil & Smith's Baez 1, dry at 7962 ft, June, 1937. **Principal Leaseholders:** J. E. Beaullieu and Hammil & Smith. This was farm-out of Louisiana Land & Exploration Co.

VERMILION BAY†

In Vermilion Bay, 16s-5e. **Means of Discovery:** Seismograph, Louisiana Land & Exploration Co., 1927. **Discovery Well:** The Texas Co.'s State 2-B, blew out 9667 ft, making gas and distillate June 6, 1938. No estimate of volume. **Type Structure:** Deep-seated salt dome; top cap rock 787 ft, top salt 796 ft. Deep tests log top of salt around 6595 ft. **Producing Formations:** Miocene sands 9667 ft. **Deepest Hole:** The Texas Co.'s Vermilion Bay B-1, dr to 10,622 ft, abn, Feb., 1937. **Casing Programs:** The Texas Co., 13⅜-in, 1150 ft; 9⅝-in, 7176 ft; 2990 ft of 5¾-in at 9667 ft. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** The Texas Co. **Remarks:** The Texas Co. has drilled a number of deep tests around this dome. Also known as Shell Point.

WEEKS ISLAND†

Sections 37, 38, 41, 42-14s-6e; 46, 47, 48, 49-14s-7e. **Means of Discovery:** Elevation above marshes; rock salt found by E. F. Myles, July 25, 1897, 276 ft. **Structure:** Salt dome; very little cap rock, top salt 100 ft. **Extent of Development:** Five tests, all dry. **Remarks:** Salt mined since 1902. Shell Petroleum Corp. has leases around this dome.

IBERVILLE PARISH

BAYOU BLUE

Sections 67, 72-9s-11e; 68, 74, 75-9s-10e. **Means of Discovery:** Seismograph, Calcasieu Oil Co., 1926. **Discovery Well:** Standard Oil Co. of La.'s Wilbert 3, 15 bbls 18.7 gravity oil daily, 1928 ft, Sept., 1929. **Structure:** Salt dome, top cap rock 2792 ft, salt 2802 ft. **Producing Formations:** Miocene-Pliocene sands 1753, 1945 and 3696 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 25. **Daily Production, July 1, 1938:** Shut in. **Estimated Ultimate Recovery:** 100,000 bbls. **Production Through June, 1938:** 74,975 bbls. **Indicated Remaining Reserve:** 25,025 bbls. **Deepest Hole:** Humble's Wilbert 6, topped sand showing oil 6507 ft, drill stem tests showed oil and salt water. Salt water sands 6549-67 ft, drill stem test 6782-6804 ft showed salt water. Cored sand showing oil 6985-88 ft, tests showed salt water. Topped sand showing oil 6999-7006 ft, tests showed 35 gravity oil and salt water. Abn 7360 ft in heaving shale, June, 1938. **Casing Programs:** Humble Oil & Refining Co., 16-in, 119 ft; 10¾-in, 914 ft; 7-in, 1753 ft. **Oil Outlet:** None. **Range of Gravity:** 1753 to 3696 ft, 18 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Standard Oil Co., Humble Oil & Refining Co. **Remarks:** Heaving shale at 7360 ft.

BAYOU DE GLAISE†

Irregular Sections 78, 79, 85, 86-8s-8e. **Means of Discovery:** Seismograph, Calcasieu Oil Co., 1926. **Structure:** Salt dome; top cap rock 3478 ft, top salt 3697 ft. **Extent of Development:** Six tests all dry. **Deepest Hole:** Standard Oil Co. of La.'s Wilbert 8, dry 4295 ft, 1931. **Principal Leaseholders:** Standard, Union Sulphur Co.

BAYOU PIGEON*

Centering around Twp 10s, R-10-e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1936. **Extent of Development:** Undrilled. **Principal Leaseholder:** Shell.

BAYOU SORRELS*

Centering around Section 99-10s-10e, also in 11s-11e. **Means of Discovery:** Reflection seismograph, The California Co., 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** The California Co., Shell Petroleum Corp.

CHOCTAW

Sections 52, 53-9s-11e, 29-8s-11e. **Means of Discovery:** Refraction seismograph, Gulf Refining Co., 1926. **Discovery Well:** Standard Oil Co. of La.'s Gay 1, Section 52, 500 bbls 29 gravity oil daily, ⅛-in choke, 4355 ft, June 22, 1931. **Structure:** Salt dome, top cap rock 415 ft, salt 667 ft. **Producing Formations:** Miocene sands, 2435 to 2894 ft, 4129 to 4353 ft, 4475 ft, 4515 to 4581 ft, 4681 to 4694 ft, 5413 to 5423 ft; Oligocene sands 8251-59 ft. **Average Sand Thickness:** 45 ft. **Productive Acres:** 90; 50 developed. **Daily Production, July 1, 1938:** 1819 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 1,955,380 bbls. **Indicated Remaining Reserve:** 3,044,620 bbls. **Deepest Hole:** Louisiana Crusader Oil Co.'s Schwing 1, n flank, 29-8s-11e, cored sand showing oil 8633-37 ft; 8845-48 ft; 8965-69 ft; well tried to blow out, 10¾-in surface csg collapsed, well was abn March, 1938. **Casing Programs:** Standard Oil Co. of Louisiana, 13⅜-in, 970 ft; 5 or 9⅝-in, 4100 to 5390 ft. **Oil Outlet:** Standard's 4-in. **Range of Gravity:** 26-29. Deep sand 37.4. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Standard and Gulf Oil Corp. jointly; with sulphur rights subleased to Texas Gulf Sulphur Co., Louisiana Crusader Oil Co. **Remarks:** Formerly called Bayou Choctaw; Grosse Tete. Solvay Chemical Co. at Baton Rouge takes salt water from field. Louisiana Crusader Oil Co. discovered Oligocene production ¾-mi n of field June 1, 1938.

RAMAH*

Section 59-7s-9e. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1934. **Extent of Development:** Undrilled. **Principal Leaseholders:** Humble, Barnsdall Oil Co., Sun Oil Co. **Remarks:** Barnsdall's original work failed to indicate structure. Humble, working from Bayou Maringouin down to Rosedale and Ramah, reported highs in Sections 66-7s-9e, and 59-9s-7e. Sometimes referred to as Rosedale.

ST. GABERIAL*

On both sides of Mississippi River, e of Plaquemines and west of St. Gaberial, centering Sections 12-9s-13e, 13-9s-1e, 18-9s-2e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1936 and 1937. There is supposed to be 400 ft of closure in this structure. **Extent of Development:** Undrilled. **Principal Leaseholder:** Shell.

SOUTH WHITE CASTLE*

South of the town of White Castle, centering Section 3, 10-11s-13e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1937. Geophysics is reported to have shown 800 feet of closure. **Extent of Development:** Undrilled. **Principal Leaseholder:** Shell.

SOUTHEAST PLAQUEMINES*

On Mississippi River, 3 mi se Plaquemines, Twps. 9 and 10s, R 12 and 13e. **Means of Discovery:** Reflection seismograph, Hoard Exploration Co. for Superior Oil Producing Co., 1934. Reflection, Shell Petroleum Corp., 1935. **Principal Leaseholder:** Gulf Oil Corp. **Remarks:** Shell surrendered leases in this area.

WHITE CASTLE

Sections 1, 2, 3, 8, 9, and 12-11s-12e. **Means of Discovery:** Refraction seismograph, Shell Petroleum Corp., 1926. **Discovery Well and Date:** Shell's Wilbert 3, 75 bbls 21 gravity oil daily, 5836 ft, Oct., 1929. **Structure:** Salt dome, top cap rock 1810 ft, salt 2313 ft. **Producing Formations:** Miocene sands 5163 to 5175 ft, 5346 to 5430 ft, 5700 to 5836 ft, 6436 to 6599 ft, 6780 to 6795 ft, 8893 to 8908 ft. **Average Sand Thickness:** 33 ft. **Productive Acres:** 175; 150 developed. **Daily Production, July 1, 1938:** 1652 bbls. **Estimated Ultimate Recovery:** 6,000,000 bbls. **Production Through June, 1938:** 2,536,068 bbls. **Indicated Remaining Reserves:** 3,463,932 bbls. **Deepest Hole:** Shell's White Castle Shingle 4, 12-11s-12e, 7-in, 8494 ft, sand showing oil 8508 to 8514 ft, drilled to 9127 ft, dry, June, 1937. **Casing Programs:** Shell, 16-in, 75 ft; 10¾-in, 1400 ft; 7-in, 5000 to 6840 ft. **Oil Outlet:** Shell Pipe Line Co.'s 4-in, then barge. **Range of Gravity:** 5346, 32.6 gravity; 5836 ft, 21 gravity; 6453 ft, 27.4 gravity. **Rigs Running, July 1, 1938:** 1. **Principal Leaseholder:** Shell.

JEFFERSON PARISH

BARATARIA*

Section 2-16s-23e. **Means of Discovery:** Seismograph, Humble Oil & Refining Co., 1928; later worked with torsion balance before drilling. Geophysics, Gulf Refining Co., 1935. **Extent of Development:** Humble's Delaware Fur Co. 1, dry 7629 ft, 1930. **Principal Leaseholders:** California Co., Shell Petroleum Corp., Gulf Oil Corp. **Remarks:** The California Co. has a block in Section 1-16s-23e, worked by reflection seismograph in 1936.

CHURCHHILL FARMS*

On the St. Charles-Jefferson Parish line, centering Section 2-14s-22e. **Means of Discovery:** Reflection seismograph, Gulf Oil Corp.,

*Prospect. †Salt dome, no production. ‡Gas field.

1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Gulf Oil Corp.

LAFITTE

Six mi se Lafitte, Sections 17, 19, 20, 21, 28, 29, and 30-17s-24e. **Means of Discovery:** Reflection seismograph, The Texas Co., 1934. Geophysical work by Louisiana Land & Exploration Co. **Discovery Well:** The Texas Co.'s Bayou St. Denis 1, 1100 bbls 34.9 gravity oil, 9572 ft, May 16, 1935. **Structure:** Deep seated salt dome. **Producing Formations:** Miocene and Oligocene sands from 8035 to 8090 ft, 9360 to 9476 ft, 9520 to 9640 ft, 9912 to 9950 ft, 9950 to 10,022 ft, 10,030 to 10,110 ft, 10,210 to 10,240 ft. The discovery well had over a dozen showings of oil from 5137 to 9572 ft. One well blew out at 12,069 ft. See deepest hole. **Average Sand Thickness:** 80 ft. **Productive Acres:** 2500; 1500 developed. **Daily Production, July 1, 1938:** 16,156 bbls. **Estimated Ultimate Recovery:** 100,000,000 bbls. **Production Through June, 1938:** 9,829,516 bbls. **Indicated Remaining Reserve:** 90,170,484 bbls. **Deepest Hole:** The Texas Co.'s State Bayou Norman 1, encountered oil sand 12,020 ft, tried to blow out 12,069 ft, stuck drill stem 12,115 ft, shot drill stem, pb and perforated 9530-9630 ft, made producer Nov., 1937. **Casing Programs:** The Texas Co., 18⅝ or 20-in, 100 to 150 ft; 13⅜-in, 1900 to 2000 ft; 7⅝-in, 9400 to 10,204 ft. **Oil Outlets:** Texas Pipe Line Co. 6-in, 8-in, 10-in gasoline to Lake Washington. **Range of Gravity:** Gravities of oil from 9360 to 10,240 ft range from 33.6 to 42 degrees. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholder:** The Texas Co. **Remarks:** One of the deepest commercial producing fields in the Gulf Coast and one of the deepest in the world. Also known as Bayou St. Denis. First field in world to produce oil below 10,000 ft. Miocene sands from 5137 down will be tested later. One well is dr to each 20 acres. Wells are allowed to produce capacity on ¼-in chokes. The Texas Co. has a gasoline plant in field. Dry gas is piped to Lake Hermitage.

JEFFERSON DAVIS PARISH

FENTON*

East of Fenton, centering around Section 36-7s-5w. **Means of Discovery:** Reflection seismograph work by Pure Oil Co., Gulf Oil Corp., 1935. Tide Water Associated Oil Co., Barnsdall Oil Co., Shell Petroleum Corp., Gulf Oil Corp., and Felmont Oil Corp., worked in the area with geophysical instruments. **Extent of Development:** Louisiana Crusader Oil Co.'s I. Langley 1, gas odor 5714 ft and salt water. Cored gas and salt water sands 7361 to 7412 ft, hole off seven degrees, pb to 6800 ft, dr to 7602 ft, DST 7359 to 7364 ft, showed gas, mud and salt water. Top gas sand 7892 ft, showed gas 8016 to 8021 ft, 8170 to 8182 ft, 8955 to 8975 ft, ran an electrical logging device to 8989 ft, well tried to blow out, cored to 9045 ft, pb and perforated 8957 to 8965 ft, showed salt water, perforated 7358 to 7364 ft, showed salt water, pb and perforated 6540 to 6552 ft, showed salt water. Total depth 9045 ft, abn, July 12, 1937. Union Sulphur Co.'s Liggett 1, 36-7s-5w, dr shale 3140 ft, July 1, 1938. **Principal Leaseholders:** Pure, Barnsdall, Shell, Tide Water Associated, Gulf Oil, Felmont, and Louisiana Crusader. **Remarks:** See Lock-Moore.

HAYES*

Four mi se Bell City on Calcasieu-Jefferson Davis line, centering Sections 16, 20, 27-11s-5w, and 28, 29, 32, 33-10s-5w. **Means of Discovery:** Reflection seismograph, torsion balance, Humble Oil & Refining Co., Gulf Refining Co., 1929; Stanolind Oil & Gas Co., Shell Petroleum Corp., 1935. **Extent of Development:** Gulf's Sweet Lake L&O Co. 1, 29-10s-5w, abnd 8900 ft, 1934. Shell's Lacassine Irrigation Co. 1, 20-11s-5w, 9344 ft, well tried to blow out, showed 1000-pound pressure on chokes, dr 9721 ft in shale at 9802 ft well blew out and made an estimated 50,000 bbls of salt water, mud and gas daily. Stuck drill stem and fished out 8100 ft. Set 7-in csg at 9523 ft for protection, dr 9793 ft, showed salt water, had considerable trouble with gas at 9824 ft, used over 3500 sacks of special drilling mud in three days. Hole was pb to 9375 ft after dr to 9844 ft and showed salt water. Pb to 9143 ft, showed salt water, abn total depth 9844 ft, July 26, 1937. Stanolind Oil & Gas Co.'s United Life Insurance 1, 16-11s-5w, tried to blow out and stuck drill pipe at 9942 ft, showed gas and salt water, abn April, 1937. **Principal Leaseholders:** Shell, Stanolind, Gulf. In Calcasieu Parish, w of Shell's block, Humble, Skelly, Gulf, and Texas Co. have protection acreage. **Remarks:** Geophysical work has shown various results in the trend along Calcasieu-Jefferson Davis line.

LOCK-MOORE*

East of Heckner, centering Section 32-7s-6w. **Means of Discovery:** Reflection seismograph, Superior Oil Producing Co., 1935; geophysics, Gulf Refining Co., 1934; Humble Oil & Refining Co., 1935. **Extent of Development:** J. K. Lewis' Lock-Moore 1, 32-7s-6w, drilled to 6046 ft, stuck drill stem, plugged back, encountered considerable trouble, redrilled to 7095 ft, cored dry sand 6666 to 6671 ft, run an electrical logging device, abn April, 1936. Top of Heterostegina 6195 ft. **Principal Leaseholders:** Superior, J. K. Lewis. Superior farmed block to J. K. Lewis who sold spreads to Tide Water, Stanolind, Pan American, and Humble. **Remarks:** Sometimes referred to as Fenton.

NIBLETT FARMS*

Sections 1, 12-11s-5w; 6, 7-11s-4w. **Means of Discovery:** Torsion balance, Louisiana Gulf Oil & Sulphur Co., 1930. Reflection seismograph, Stanolind Oil & Gas Co., 1935.

NORTHWEST LAKE ARTHUR*

Northwest of Lake Arthur and southeast of South Roanoke gas field, centering Section 31-10s-3w. **Means of Discovery:** Reflection seismograph, Continental Oil Co., 1937. **Extent of Development:** Continental Oil Co.'s Fay 1, 18⅝-in, 183 ft; 13⅜-in, 1999 ft; gas show 10,097-10,108 ft, showed 2 ohms, blew out at 10,935 ft, bridged over stuck drill stem, showed 2080 pounds on drill stem in 15 minutes, shot at 5665 ft, abn Jan., 1938. Top Marginulina at 10,673 ft. **Principal Leaseholder:** Continental.

ROANOKE

Centering around S½ Section 1, SEc Section 2, N½ Section 11, N½ Section 12, NW 11-9s-4w, N½ Section 14-9s-4w. **Means of Discovery:** Surface indication; torsion balance minimum and seismograph, Vacuum Oil Co., 1928. Reflection seismograph also showed as definite high. **Discovery Well:** Shell Petroleum Corp.'s Kratzer 1, 660 ft s 330 ft w of ne cor NW Section 12-9s-4w, 50 bbls 37 gravity oil per hour through 18/64-in choke from Marginulina sand at 8665-8692 ft, May 24, 1934. **Structure:** Apparently a deep seated salt dome, although no cap rock or salt reached. Field has several "horseshoe" faults. **Producing Formations:** Marginulina zone of Oligocene, 7597 ft, 7778 to 7934 ft, 8644 to 8730 ft; oil and gas sands 8810-56 ft. **Average Sand Thickness:** 55 ft. **Productive Acres:** 850; 800 developed. **Daily Production, July 1, 1938:** 3614 bbls. **Estimated Ultimate Recovery:** 13,000,000 bbls. **Production Through June, 1938:** 6,726,493 bbls. **Indicated Remaining Reserve:** 6,273,507 bbls. **Deepest Hole:** Shell's Jarnigan 1, e offset to the discovery well, quit at 10,750 ft, Sept., 1935; tried to blow out 9999½ ft. **Casing Programs:** Humble, 16-in 147 ft; 10¾-in, 2900 ft; 7-in, 8800 ft. Shell Petroleum Corp., 13⅜-in, 2550 ft; 7, 8⅝ or 9⅝-in, 7465 to 9006 ft. **Oil Outlets:** Shell Pipe Line Co., 6-in; Standard of Louisiana's 6-in. **Range of Gravity:** 37-45. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Shell, Humble Oil & Refining Co., John and Aston Glassel, Gulf Oil Corp. **Remarks:** One well is dr to each 18 acres. Wells are allowed to produce 60 percent of potential gauge on ¼-in choke.

SOUTH ELTON

South of Elton, centering around Sections 27, 28-7s-3w. **Means of Discovery:** Reflection seismograph, Stanolind Oil & Gas Co., Amerada Petroleum Corp., 1935. Humble Oil & Refining Co., and several other companies have worked with geophysical instruments. **Discovery Well:** Amerada-Stanolind's Calcasieu National Bank 1-B encountered gas sands from 9137 to 9139 ft, blew out, abn March, 1937. Calcasieu National Bank 2-B, 2000 ft w of 1-B, 128.64 bbls 52 gravity distillate and 3,800,000 cu ft gas daily, ¼-in choke, Aug. 27, 1937, 8965 ft. **Structure:** Dome. **Producing Formation:** Oligocene sand (Chickasawhay) 8955 to 8965 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 100; 40 developed. **Daily Production, July 1, 1938:** 25 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 10,896 bbls. **Indicated Remaining Reserve:** 989,104 bbls. **Deepest Hole:** Amerada-Stanolind's Calcasieu National Bank 2-B, 27-7s-3w, tried to blow out 9154 ft, set 9⅝-in, 8647 ft; top Cockfield 12,200 ft, set 7-in 9230 ft; dr to 13,210 ft; made test up hole, was abn 7200 ft, June, 1938. Is fourth deepest well in world. First well in South Louisiana to dr to 13,000 ft. **Casing Programs:** Amerada-Stanolind, 20-in, 103 ft; 13⅜-in, 1950 ft; 9⅝-in, 8647 ft. **Oil Outlet:** Continental's 3½-in. **Gravity Oil:** 52. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Stanolind, Amerada, Gulf, Sun, Barnsdall, Magnolia Petroleum Co., Tide Water Associated. **Remarks:** South Elton was the first field discovered on the trend play which started after the discovery of Tepetate, Acadia Parish. This prospect was called China in the 1936 Gulf Coast issue.

SOUTH JENNINGS

South of Jennings, centering around Sections 15, 16-10s-3w. **Means of Discovery:** Reflection seismograph and torsion balance, Shell Petroleum Corp., 1934; Stanolind Oil & Gas Co., 1934-35. **Discovery Well:** Stanolind's Calcasieu National Bank 1, Nov. 12, 1936, 4,000,000 cu ft gas daily and 5 bbls of 70-gravity distillate per hour at 8638 to 8648 ft, ¼-in choke. **Structure:** Deep seated salt dome. **Producing Formations:** Oligocene sands, 8638 to 8648 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 100; 40 developed. **Daily Production, July 1, 1938:** Shut in. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 5822 bbls. **Indicated Remaining Reserve:** 994,178 bbls. **Deepest Hole:** Stanolind's Calcasieu National Bank 1, 15-10s-3w, drilled to 9944 ft, pb and was discovery well. See discovery well. **Casing Programs:** Stanolind, 20-in, 100 ft; 13⅜-in, 2100 ft; 9⅝-in, 8842 ft. **Oil Outlet:** Storage. **Gravity Oil:** 8638 to 8648 ft, 52 to 70 degrees. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Stanolind, Loffland Brothers, Gulf Oil Corp. **Remarks:** Stanolind's first wildcat and first discovery in South Louisiana.

SOUTH ROANOKE

South of Roanoke, centering around Sections 23, 25, 31-10s-4w. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1935. **Discovery Well:** Shell's Sturdevant 1, April 7, 1937, 1 bbl 52 gravity distillate per hr, 2,720,000 cu ft gas daily, from perforations at 8540 to 8550 ft. Later was worked over and made small amount of 47-gravity oil and gas after perforating from 8460 to 8475 ft. **Type Structure:** Deep seated salt dome but no domal material has been encountered. **Producing Formations:** Marginulina of Oligocene 8460 to 8475 ft; 8540 to 8550 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 76 bbls. **Estimated Ultimated Recovery:** 1,000,000 bbls. **Production Through 1937:** 24,028 bbls. **Indicated Remaining Reserve:** 975,972 bbls. **Deepest Hole:** Continental's J. Sturdivant 1, 36-10s-4w, set 9⅝-in csg at 9825 ft, dr ahead July 1, 1938. **Casing Programs:** Shell, 10¾-in, 2619 ft; 7-in, 8630 ft. Union Sulphur Co., 12½-in, 1835 ft; 7-in, 9151 ft. **Oil Outlet:** Storage. **Gravity Oil:** 47 gravity 8460 and 8550 ft. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders,** Shell, Union Sulphur Co. **Remarks:** Shell farmed out acreage to Union Sulphur Co. and to Continental Oil Co.

SOUTH WELSH*

Sections 36-9s-5w, 31-9s-4w, 1-10s-5w, 6-10s-4w. **Means of Discovery:** Seismograph, Pure Oil Co., 1925; Stanolind Oil & Gas Co., 1937. **Extent of Development:** Pure's Day 1, dry 5216 ft, 1930. Stanolind's Conover 1, and 2 were drilled w of Welsh.

*Prospect. †Salt dome, no production. ‡Gas field.

WELSH

Sections 21, 22, 27, 28-9s-5w. **Means of Discovery:** Elevation, gas seep. **Discovery Well:** Welsh Home Dev. & Oil Co.'s No. 2, 1902, blew out, 1001 ft. Rio Bravo Oil Co.'s No. 1, first oil, Jan., 1903, at 1012 ft. **Structure:** Regarded as deep seated salt dome, but no domal material encountered. **Producing Formations:** Pli-Miocene sands at 1000 to 1300 and 1783 to 3000 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 50. **Daily Production, July 1, 1938:** 25 bbls. **Estimated Ultimate Recovery:** 750,000 bbls. **Production Through June, 1938:** 614,610 bbls. **Indicated Remaining Reserve:** 135,390 bbls. **Deepest Hole:** On west flank, Stanolind's Conover 1, 20-9s-5w, dry at 7311 ft, April, 1938. **Casing Program:** Stanolind, 16-in, 42 ft; 10¾-in, 1064 ft. **Oil Outlets:** Truck and rail. **Range of Gravity:** 18-21. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Stanolind, Tide Water Oil Co.

WOODLAWN

Two mi e of Woodlawn, centering around Section 12-9s-8w. **Means of Discovery:** Geophysics, Union Sulphur Co., 1937. Shell Petroleum Corp. and Gulf Refining Co., torsion balance and reflection seismograph, 1927. Strake Petroleum Corp. also worked in the area. **Discovery Well:** Union Sulphur Co.'s Calcasieu National Bank 1, Feb. 13, 1938; 43 bbls 51 gravity distillate and 2,500,000 cu ft gas daily, 12/64-in bottom hole choke and 33/64-in top choke at 8288 ft. First oil well, Union Sulphur Co.'s Calcasieu National Bank 2, 12-9s-8w, April 24, 1938, 590 bbls 36.7 gravity oil daily ¼-in choke 8898 ft. **Structure:** Dome. **Producing Formations:** Oligocene sands 8286 to 8288 ft; 8894 to 8898 ft. **Average Sand Thickness:** 8 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 616 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 20,006 bbls. **Indicated Remaining Reserve:** 979,994 bbls. **Deepest Hole:** Union Sulphur's Calcasieu National Bank 3-B, 1-9s-6w, dr to 9230 ft, fsh July 1, 1938. **Casing Program:** Union Sulphur Co., 10-in, 1262 ft; 6⅝-in, 8524 ft. **Oil Outlet:** Storage. **Gravity Oil:** 8286 to 8288 ft, 51; 8894 to 8898 ft, 36.7. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Union Sulphur Co., Strake Petroleum Corp., Gulf Oil Corp., Magnolia Petroleum Co. **Remarks:** First development in the area was Strake Petroleum Co.'s Pettigrew 1, dry 7348 ft, March, 1934; Calcasieu National Bank 1, odor oil 8080-91 ft, sand showing oil, 7331-35 ft, quit at 8505 ft, 1935. Same operator's Miller Estate 1, 7-9s-5w, cored salt water sand 7864 to 7878 ft, quit at 8505 ft, July 23, 1936.

LAFAYETTE PARISH

CARENCRO*

Section 33-8s-4e. **Means of Discovery:** Seismograph, Pure Oil Co., 1930. **Extent of Development:** Pure's Manmotin 1, dry 6742 ft, 1930. **Remarks:** See Bristol prospect, St. Landry Parish.

LAFAYETTE*

North of Lafayette, Section 13-9s-4e. **Means of Discovery:** Torsion balance, Stanolind Oil & Gas Co., 1935. Reflection seismograph, Gulf Oil Corp., 1936. **Extent of Development:** Undrilled. **Principal Leaseholders:** Stanolind, Milner, Sun Oil Co., Gulf Oil Corp., Magnolia Pet. Co. **Remarks:** Gulf and Stanolind dropped acreage in this area after geophysical work.

SCOTT-DUSON*

South of Scott and between Scott and Duson, centering around Sections 36-9s-3e and 4, 5-10s-3e. **Means of Discovery:** Reflection seismograph, Magnolia Petroleum Co., 1936 and 1937, also by Continental Oil Co., torsion balance, Coastal Oil Finding Co. **Extent of Development:** Continental Oil Co.'s Foreman 1, 36-9s-3e, dr to 10,973 ft, abn May, 1938, no shows reported. **Principal Leaseholders:** Continental, Magnolia, Sun Oil Co., Gulf Oil Corp. **Remarks:** Was referred to as Duson in 1936 Gulf Coast issue.

YOUNGSVILLE*

Southwest of Broussard, centering around 5-11s-5e. **Means of Discovery:** Reflection seismograph and torsion balance by Stanolind Oil & Gas Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholder:** Stanolind.

LAFOURCHE PARISH

CHACAHOULA†

Sections 63, 64, 70, 71, 72-15s-15e. **Means of Discovery:** Gas seeps; refraction seismograph, Gulf Refining Co., 1926. Gulf's Stark 1 proved salt dome. **Structure:** Salt dome; top cap rock 1035 ft, top salt 1302 ft. **Extent of Development:** 40 tests, mostly to cap rock investigating sulphur possibilities; showings of sulphur, no oil production. **Deepest Hole:** Gulf's Stark 25, 5000 ft, 1930. **Principal Leaseholders:** Gulf Oil Corp. (sulphur rights sub-let to Texas Gulf Sulphur Co.), States Production Co., Union Sulphur Co. Sun Oil Co. is dr a deep test on flank of dome. **Remarks:** Was called Thibodeaux.

EAST LABADIEVILLE*

East of Labadieville, centering in 14s, 15 and 16e. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble; five blocks.

FIELD LAKE*

North of Long Lake, Section 48-17s-18e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1934. Fohs Oil Co., 1936 and 1937. **Principal Leaseholders:** Shell, Gulf Oil Corp., Fohs Oil Co. in Lake.

*Prospect. †Salt dome, no production. ‡Gas field.

GOLDEN MEADOWS*

North of Leeville field, surrounding the town of Golden Meadows, 1-20s-21e. **Means of Discovery:** Reflection seismograph, The Texas Co. and Louisiana Land & Exploration Co., 1936. Refraction work by Gulf Refining Co. **Extent of Development:** The Texas Co.'s LaTerre 1, dr hard sand 6784 ft, July 1, 1938. **Principal Leaseholders:** The Texas Co., Louisiana Land & Exploration Co.

LAFOURCHE CROSSING*

Section 130-15s-17e. **Means of Discovery.** Reflection seismograph, Perry Scranton, 1936. **Extent of Development:** Undrilled. **Principal Leaseholder:** Perry Scranton.

LAKE BOEUF*

West of Lake Boeuf, Sections 53-15s-18e; 17, 18-15s-19e. **Means of Discovery:** Reflection seismograph, torsion balance, 1934. **Extent of Development:** Gay, Trustee's Godchaux 1, Section 34, quit at 6226 ft, 1935. Emerald Petroleum Co.'s Bowie 1, 53-15s-18e, abnd 8456 ft, Jan., 1935. **Remarks:** Formerly known as Bowie.

LAKE BULLY CAMP*

Centering around Section 64-18s-21e. **Means of Discovery:** Refraction seismograph, Gulf Refining Co., 1928. The Texas Co. shot across the dome in 1931. Humble Oil & Refining Co. worked in the area in 1929. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble Oil & Refining Co. **Remarks:** Large fee holder refuses to lease acreage where geophysical work has shown a high, but all surrounding acreage is leased.

LAKE LONG

Near the town of Bourg, centering Section 65-17s-19e. **Means of Discovery:** Reflection seismograph, Fohs Oil Co. and Pilgrim Exploration Co., 1935; Gulf Oil Corp., Shell Petroleum Corp. worked in the area with geophysical instruments. **Discovery Well:** Fohs Oil Co. and Pilgrim Exploration Co.'s State Long Lake 1, June 22, 1937, 36 bbls 38.3 gravity oil per hour, various size chokes. First 24 hours, 890 bbls, ¼-in choke, 9406 ft. **Type Structure:** Dome. **Producing Formations:** Miocene sands 9365 to 9392 ft; 10,416 to 10,419 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 400; 60 developed. **Daily Production, July 1, 1938:** 728 bbls. **Estimated Ultimate Recovery:** 8,000,000 bbls. **Production Through June, 1938:** 195,167 bbls. **Indicated Remaining Reserve:** 7,804,833 bbls. **Deepest Hole:** Fohs and Pilgrim Exploration Co.'s State 3, 7-in, 9477 ft; drilled to 11,347 ft, pb and comp 9382 ft, Feb., 1938. **Casing Programs:** Fohs and Pilgrim, 26-in, 200 ft; 20-in, 270 ft; 13⅜-in, 2730 ft; 9⅝-in, 8384 ft; 7-in, 9350 to 9450 ft. **Oil Outlet:** Barge. **Gravity Oil:** 9376 ft, 38.9 gravity; 10,416 ft, 51 gravity. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Fohs Oil Co. and Pilgrim Exploration Co. 50-50 basis. Shell Petroleum Corp., Gulf Oil Corp.

LEESVILLE

Sections 26, 27, 34-21s-22e. **Means of Discovery:** Seismograph, Gulf Refining Co., 1928. **Discovery Well:** The Texas Co.'s La. Land & Explo. Co. 2, Section 26, 30 bbls 20 gravity oil per hour, ½-in choke 3028 ft, February 21, 1931. Deepened, 1750 bbls 29 gravity oil daily, ½-in choke, 3598-3628 ft, April, 1931. **Structure:** Salt dome, top salt 4080 ft. **Producing Formations:** Miocene Sands 2929-3046 ft, 3262-4602 ft, 4808 to 4966 ft and 5019 to 5047 ft; 5633 to 5683 ft, 6176 to 6250 ft. **Average Sand Thickness:** 120 ft. **Productive Acres:** 325. **Daily Production, July 1, 1938:** 4988 bbls. **Estimated Ultimate Recovery:** 25,000,000 bbls. **Production Through June, 1938:** 18,604,874 bbls. **Indicated Remaining Reserve:** 6,395,126 bbls. **Deepest Hole:** Gulf's Lafourche 1, Section 23, dry 7300 ft, Feb., 1934. **Casing Programs:** The Texas Co., 16-in, 100 ft; 10¾-in, 750 to 850 ft; 7⅝-in, 3600 to 5000 ft; 9⅝-in, 5575 ft. **Oil Outlet:** Barge. **Range of Gravity:** 3000 ft, 20 gr; 3300 ft, 22 gr; 3600 ft, 3700 ft, 3900 ft, 29 gr; 4200 ft, 35 gr; 4300 ft, 30 gr; 4800 to 6750 ft, 33 to 41 gr. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholders:** Emerald Petroleum Corp., Gulf Oil Corp., Lincoln Oil Co., Shell Petroleum Corp., The Texas Co. **Remarks:** Sometimes called Bayou La Fourche.

MARCHAND†

Centering Twp 19-23s-23e. **Means of Discovery:** Seismograph refraction, Gulf Refining Co., 1928. Hoard Exploration Co. did work in area for William Helis. **Structure:** Salt dome, top salt 7463 ft. **Extent of Development:** Three tests drilled. William Helis' City of New Orleans 1, logged top of salt at 7463 ft, several showings of oil above salt. Hole was pb from 8012 ft in salt and redrilled to 7547 ft in salt and abn May, 1937. City of New Orleans 2, oil show 7322-25 ft, top salt 7959 ft, dry in salt 9660 ft, Dec., 1936. **Principal Leaseholders:** Gulf Oil Corp., William Helis.

NORTH FIELD LAKE*

North of Field Lake, centering around Section 14-16s-18e. **Means of Discovery:** Pendulum and reflection seismograph, 1936, 1937. Gulf Oil Corp. **Extent of Development:** Undrilled. **Remarks:** Gulf Oil Corp., dropped acreage in area after geophysical work.

RACELAND

Two mi e of Raceland, centering Section 34-15s-19e. **Means of Discovery:** Surface geology, reflection and refraction seismograph, Amerada Petroleum Corp. and Louisiana Land & Exploration Co., 1936. **Discovery Well:** Amerada and Louisiana Land & Exploration Co.'s South Coast 1, Jan. 25, 1938, 733 bbls 34.9 gravity oil daily, ¼-in choke, 10,208 ft. **Type Structure:** Dome. **Producing Formations:** Miocene sands from 10,183 to 10,201 ft and from 10,205 to 10,208 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 697 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 93,984 bbls. **Indicated Remaining Reserve:** 4,906,016 bbls. **Deepest Hole:** Amerada's Godchaux 1, 34-15s-19e, set 5-in csg 11,315 ft, dr ahead July, 1938. **Casing Programs:** Amerada, 20-in, 221 ft; 13⅜-in, 2700 ft; 9⅝-in, 7643 ft; 7-in, 9003 ft; 5-in,

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CHESTER

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10,262 ft. **Oil Outlet:** Barge. **Gravity Oil:** 10,183 to 10,208 ft, 34.9. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholders:** Amerada and Louisiana Land & Exploration Co. 50-50 basis. **Remarks:** This is the second oil field discovered on a 40,000-acre block. See Bayou DesAllemands.

TIMBALIER BAY

In Timbalier Bay, centering around Section 36-23s-21e. **Means of Discovery:** Gravity and reflection seismograph, Gulf Oil Corp., 1936. **Discovery Well:** Gulf's State PP3, January 25, 1938; 14 bbls per hour, 3/16-in choke; perforations 6955 to 6959 ft (20 shots). **Type Structure:** Salt dome; top sand 7741 ft. **Producing Formations:** Miocene sands 6955 to 6959 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 56 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 34,064 bbls. **Indicated Remaining Reserve:** 965,936 bbls. **Deepest Hole:** Discovery well drilled to 8722 ft, was pb and comp. **Casing Programs:** Gulf, 20-in, 57 ft; 13⅜-in, 1455 ft; 9⅝-in, 6832 ft; set 302 ft of 7-in onto 9⅝-in and then 635 ft of 5-in onto 7-in. **Oil Outlet:** Barge. **Gravity Oil:** 6955 to 6959 ft, 32.8. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Gulf, The Texas Co.

VALENTINE

Centering around Sections 7, 8, 10-17s-20e. **Means of Discovery:** Surface indications induced drilling shallow wells which gave encouraging data. Reflection seismograph, Barnsdall Oil Co., 1932. Later worked by Pan American Production Co. **Discovery Well:** Pan American and Barnsdall's Harange 1, Dec. 29, 1936, 20 bbls 36.8 gravity oil per hour, ¼-in choke, 6977 ft. **Type Structure:** Salt dome; solid salt 6580 ft, broken salt 6573 ft. Discovery well did not encounter salt. **Producing Formations:** Miocene sands at 3835 to 3850 ft, 5050 to 5075 ft, 5176-90 ft, 5364 to 5390 ft, 5407 to 5426 ft, 5886 ft, 6082 to 6150 ft, 6928 to 6950 ft. **Average Sand Thickness:** 60 ft. **Productive Acres:** 250; 200 developed. **Daily Production, July 1, 1938:** 4663 bbls. **Estimated Ultimate Recovery:** 15,000,000 bbls. **Production Through June, 1938:** 1,871,764 bbls. **Indicated Remaining Reserve:** 13,128,236 bbls. **Deepest Hole:** Pan American's Community 2-B, 58-17s-20e, dr to 9328 ft, stuck dr pipe fsh, July, 1938. **Casing Programs:** Pan American, 16-in, 235 ft; 10¾-in, 1500 to 1800 ft; 7-in, from 5100 to 6900 ft. **Oil Outlet:** Pan American's 6-in to Bayou Lafourche, then barge. **Gravity Oil:** All oil sand makes 32 to 38 gravity oil. Gas sand 5176 ft, 50.1 gr. **Rigs Running, July 1, 1938:** Three. **Principal Leaseholders:** Pan American, Barnsdall. **Remarks:** Pan American leased additional acreage after taking a farm-out from Barnsdall. Pan American operates the field on a 50-50 basis with Barnsdall Oil Co. Also was known as LaRose dome. **Heaving Shale:** Below 8138 ft.

LIVINGSTON PARISH

DENHAM SPRINGS*

Centering Section 7-7s-3e. **Means of Discovery:** Reflection seismograph, Stanolind Oil & Gas Co., 1937. **Extent of Development:** Neville and Grubb's Evans 1, 47-7s-3e, topped Heterostegina 7622 ft abn in porous lime 7656 ft, Sept., 1937. **Principal Leaseholders:** Superior Oil Co. Stanolind Oil & Gas Co. dropped acreage after shooting.

SPRINGFIELD*

Southeast of Springfield, centering Section 32-7s-6e. **Means of Discovery:** Geophysics by United Gas Public Service Corp., 1936. **Extent of Development:** Undrilled. **Principal Leaseholder:** United Gas Public Service Corp.

WATSON*

Near the town of Watson, centering Section 52-5s-2e. **Means of Discovery:** Geophysics, Tide Water Associated Oil Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholders:** Tide Water Associated Oil Co., Sun Oil Co., Magnolia Petroleum Co.

PLAQUEMINES PARISH

BAY ADAMS*

Centering around Bay Adams, Section 32-19s-28e, 23-20s-28e. **Means of Discovery:** Geophysics by Southern Sulphur Corp., and Gulf Oil Corp. **Extent of Development:** Southern Sulphur Corp.'s State 1, abn 1410 ft, April, 1935. Gulf's State 2, reported slight show from 1350 to 1359 ft, dry at 4678 ft, June, 1937. **Principal Leaseholders:** Gulf Oil Corp., (took acreage from Southern Sulphur Co.), Shell Petroleum Corp.

BIRD ISLAND

Centering around Section 6-20s-19e. **Means of Discovery:** Reflection seismograph, Gulf Refining Co., 1937. The Texas Co. did geophysical work in this area but did not find structure. **Discovery Well:** Gulf's Grand Prairie Levee District 1-A, July 9, 1938, 21 bbls, 27.2 gravity oil per hour, ⅝-in choke, 6133-51 ft. **Type Structure:** Believed to be deep-seated salt dome. **Producing Formations:** Miocene sands 6132 to 6151 ft. **Average Sand Thickness:** Broken sands, 19 ft. **Productive Acres:** Only the discovery well productive. **Deepest Hole:** Discovery well dr to 6151 ft. **Casing Programs:** Gulf, 20-in, 90 ft; 9⅝-in, 6131 ft. **Oil Outlet:** Storage. **Gravity Oil:** 6133-51 ft, 27.2 gravity. **Rigs Running, July, 1938:** None. **Principal Leaseholder:** Gulf.

*Prospect. †Salt dome, no production. ‡Gas field.

GARDEN ISLAND BAY

At the mouth of the Mississippi river, centering Sections 37, 38-23s-33e. **Means of Discovery:** Refraction seismograph, McCollum Exploration Co., 1928. **Discovery Well:** The Texas Co.'s Garden Island Bay 16, 525 bbls, 37.2 gravity oil, ¼-in choke, 4914-28 ft, Sept. 11, 1935. **Structure:** Piercement type salt dome, top cap rock 1691 ft, salt 2017 ft. **Producing Formations:** Miocene sands 4072-4148 ft, 4482-4511 ft, 4552-4590 ft, 4615-4644 ft, and from 4905 to 5061 ft, 5782 to 5810 ft, gas sand, 1672 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 300; 250 developed. **Daily Production, July 1, 1938:** 2466 bbls. **Estimated Ultimate Recovery:** 3,000,000 bbls. **Production Through June, 1938:** 1,468,006 bbls. **Indicated Remaining Reserve:** 1,531,994 bbls. **Deepest Hole:** The Texas Co.'s State 29, 38-23s-33e, drilling in shale 6930 ft, July, 1938. Had sand showing oil 6901-28 ft. **Casing Programs:** The Texas Co., 21½-in, 88 ft; 13⅜-in, 1200 to 1300 ft; 7⅝-in, 4600 to 6100 ft. **Oil Outlets:** Texas Pipe Line Co.'s 6-in to Pilot town, then barge. **Range of Gravity:** 4072-4148, 45; 4550 ft, 39 gravity; 4950 ft, 40.8 gravity; 5780 ft, 37.2 gravity. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** The Texas Co. **Remarks:** Several gas wells around 900 and 1400 ft. Garden Island Bay is the furthest south and east field. Difficult drilling on the delta.

LAKE HERMITAGE

Sections 1, 12-18s-25e. **Means of Discovery:** Refraction seismograph, Gulf and Humble, 1928. **Discovery Well:** Gulf Refining Co.'s La Fourche Levee Basin District 1, Section 12-18s-25e, flowing three bbls 37.6 gravity oil daily from sand at 4515 ft, after drilling salt to 4604 ft and plugging back, May, 1934. **Structure:** Salt dome, top salt 3811 ft. **Producing Formations:** Miocene sands 3172-3194 ft, 4515 ft, 4640 to 4646 ft. **Average Sand Thickness:** 15 ft. **Productive Acres:** 75. **Daily Production, July 1, 1938:** Shut in. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 114,598 bbls. **Indicated Remaining Reserve:** 885,402 bbls. **Deepest Hole:** Gulf's Lafourche Levee Basin District 7, 12-18s-24e, dr to 9786 ft, pb and made series of tests up hole, finally abn 7120 ft, April, 1938. **Casing Programs:** Gulf, 16½-in, 66 ft; 7-in, 8074 ft; 5-in, 9297 ft. **Oil Outlet:** Barge. **Range of Gravity:** 3200 ft, 32.1 gravity; 4500 ft, 37.6 gravity. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Gulf Oil Corp. and Humble Oil & Refining Co. jointly, with sulphur rights subleased to Texas Gulf Sulphur Co.

LAKE WASHINGTON

Sections 1, 2, 11, 12, 13, 14-20s-26e. **Means of Discovery:** Refraction seismograph, Gulf Refining Co., Shell Petroleum Corp., Humble Oil & Refining Co., independently, 1928. **Discovery Well:** Humble's Cockrell-Moran 4, 240 bbls, ⅛-in choke, from cap rock 1154-1159 ft, June 16, 1931. **Structure:** Salt dome, top cap rock 1094 ft, salt 1574 ft; very large dome. **Producing Formations:** Oil from cap rock at 1130 to 1495 ft. One well made pipe line oil from 4324 to 4337 ft, but was abnd. **Average Sand Thickness:** 25 ft. **Productive Acres:** 150. **Daily Production, July 1, 1938:** 881 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 2,276,204 bbls. **Indicated Remaining Reserve:** 2,723,796 bbls. **Deepest Hole:** Humble's Cockrell-Moran 25, 35-20s-26e, top sand 6337 ft, 7-in, 6340 ft, swabbed salt water, drilled to 6445 ft in salt, abn Feb., 1938. **Casing Programs:** Humble Oil & Refining Co., 20-in, 165 ft; 7-in, 1137 ft and 6340 ft; 9⅝-in, 4316 ft. **Oil Outlet:** Barge. **Range of Gravity:** 24.4. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Humble Oil & Refining Co. **Remarks:** Was called Lake Grande Ecaille. Freeport has modern sulphur mining plant.

POTASH

Centering around Section 10-18s-15e. **Means of Discovery:** Refraction work by Gulf Refining Co., 1929; Humble Oil & Refining Co., 1928. Core drilling by Humble Oil & Refining Co. and Texas Gulf Sulphur Co., 1937. **Discovery Well:** Humble's Orleans Levee Board 11, Sept. 20, 1937, 25 bbls 16 gravity oil daily by heads, 696 ft. **Type Structure:** Salt dome, top cap rock 804 ft; salt 1465 ft. **Producing Formations:** Plio-Miocene sands 689 to 695 ft. **Average Sand Thickness:** 7 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** 200,000 bbls. **Production Through June, 1938:** 433 bbls. **Indicated Remaining Reserve:** 199,567 bbls. **Deepest Hole:** Humble's Orleans Levee Board 36, 41-18s-15e, dr shale 8094 ft, July, 1938. **Casing Programs:** Humble, 16-in, 80 ft; 7, 8, 9, 10-in, 127 to 910 ft. **Oil Outlet:** Barge. **Gravity Oil:** 689 ft, 16 gravity. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Humble, with sulphur rights sub-leased to Texas Gulf Sulphur Co.

QUARANTINE*

Center of east edge of Twp. 21s-32e. **Means of Discovery:** Seismograph, Gulf Refining Co., Humble Oil & Refining Co., 1928. **Extent of Development:** Undrilled. **Remarks:** Indefinite prospect. See Quarantine Bay.

QUARANTINE BAY

In Quarantine Bay, centering around Section 17-19s-17e. **Means of Discovery:** Gravity work and reflection seismograph, Gulf Oil Corp., 1936. **Discovery Well:** Gulf's State QQ 3, 845 bbls 36.3 gravity oil daily through ¼-in choke, 8134 to 8177 ft, Nov. 28, 1937. One hour gauged showed 88.4 bbls. **Type Structure:** Believed to be deep-seated salt dome. **Producing Formations:** Miocene sands at 8134 to 8202 ft. **Average Sand Thickness:** 65 ft. **Productive Acres:** 500; 40 developed. **Daily Production, July 1, 1938:** 522 bbls. **Estimated Ultimate Recovery:** 12,000,000 bbls. **Production Through June, 1938:** 107,330 bbls. **Indicated Remaining Reserve:** 11,892,670 bbls. **Deepest Hole:** Gulf's State QQ 4, 17-19s-17e, set 5-in csg at 10,950 to core ahead. **Casing Programs:** Gulf 20-in, 84 ft; 13⅜-in, 1466 ft; 9⅝-in, 8090 ft. **Oil Outlets:** Gulf Pipe Line Co.'s 6-in, then barge. **Gravity Oil:** 8134 to 8177 ft, 36.3 gravity. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** Gulf. **Remarks:** One of the major discoveries in 1937.

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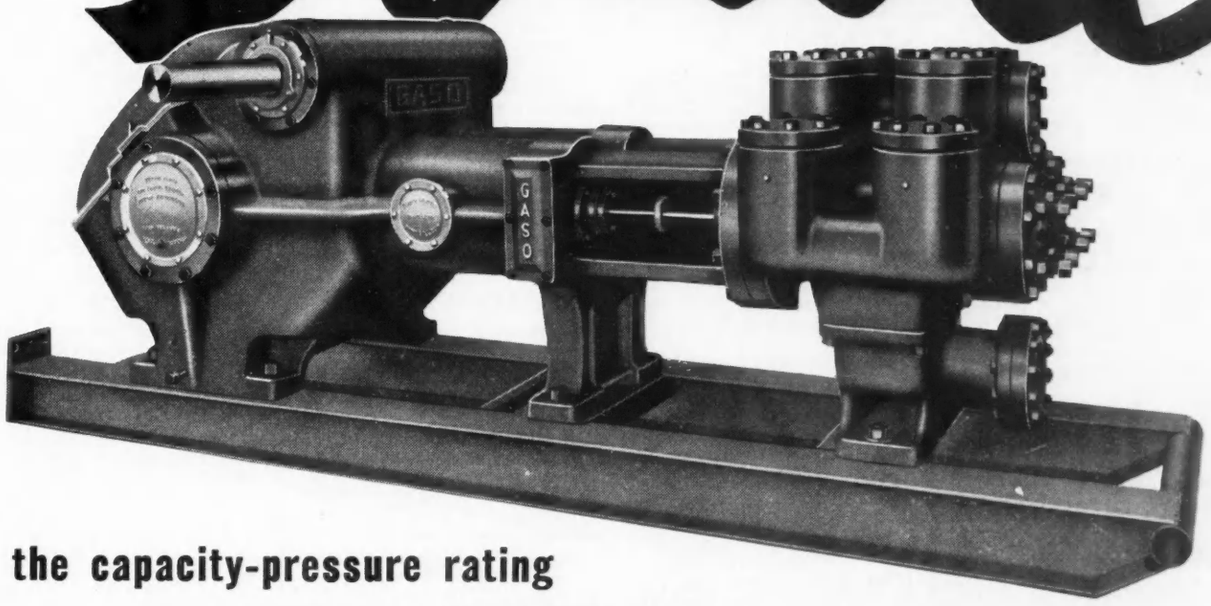

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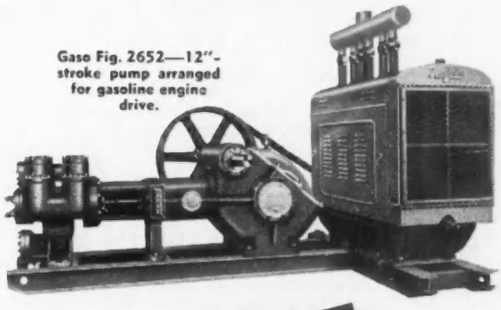

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VENICE

Centering around Section 26-21s-30e. **Discovery Means:** Refraction seismograph, Gulf Refining Co., 1928. Flanks of the dome were worked with seismograph and torsion balance by Tide Water Associated Oil Co. **Discovery Well:** Tide Water Associated's Manhatten Fruit Co. 3, July 18, 1937, 9 bbls 38 gravity oil per hour through 5/32-in choke at 7208 ft. **Type Structure:** Salt dome; cap rock 2216 ft; top salt 2965 ft. **Producing Formations:** Miocene sands 7127 to 7208 ft. **Average Sand Thickness:** 32 ft. **Productive Acres:** 150; 30 developed. **Daily Production, July 1, 1938:** 1468 bbls. **Estimated Ultimate Recovery:** 7,000,000 bbls. **Production Through June, 1938:** 358,291 bbls. **Indicated Remaining Reserve:** 6,641,709 bbls. **Deepest Hole:** Tide Water Associated's Manhatten Fruit Co. 4, 26-21s-30e, drilled to 7726 ft, perforated 7135-50 ft, comp oil well, Dec., 1937. **Casing Programs:** Tide Water Associated, 20-in, 77 ft; 10-in, 2445 ft; 7-in, 7190 ft. **Oil Outlet:** Barge. **Gravity Oil:** 7120-55 ft, 40; 7180-7208 ft, 38. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Tide Water Associated, 50 percent of 11,000 acres, Humble, and Gulf 25 percent each. **Remarks:** Six tests were drilled on this prospect before it was productive. Tide Water Associated took over leases held by Southern Sulphur Co. and drilled three of the six dry holes. Was called Spanish Pass or Rose Dome.

WEST VENICE*

West of Venice field, 21s-29 and 30e. **Means of Discovery:** Reflection seismograph, Louisiana Land & Exploration Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholders:** Louisiana Land & Exploration Co.

ST. BERNARD PARISH

LAKE BORGNE*

Centering Section 6-12s-15e. **Means of Discovery:** Geophysics, 1935, 1936, 1937. **Extent of Development:** Gulf Refining Co.'s State RR 3 dr shale, 10,278 ft, July 1, 1938. **Principal Leaseholder:** Gulf Oil Corp. **Remarks:** See Lake Lery.

LAKE LERY*

Section 28-14s-14e. **Means of Discovery:** Seismograph, 1928. **Extent of Development:** Southern Sulphur Corp.'s State 1, quit at 2138 ft, April, 1934. Gulf's Lake Lery 2, dry 6667 ft, July, 1937, was drilled to hold leases. Gulf's State RR2, 38-14s-15e, dry 5102 ft, Jan., 1938. Well was taken over from Southern Sulphur Co. **Principal Leaseholder:** The Texas Co. (110,000 acres Delacroix Land & Fur Co. land in Plaquemines and St. Bernard). **Remarks:** Also called Delacroix Island. See Lake Borgne.

OLEVIER*

Sections 127, 135-14s-14e. **Means of Discovery:** Geophysics, 1928, Petty Geophysical Engineering Corp., McCollum Exploration Co., Gulf Refining Co. **Extent of Development:** Thompson et al's Delacroix 1, Section 127, quit at 6225 ft, 1933. Joe Danciger's Battles 1, dry 7055 ft, May, 1935. F. F. Kramer's Robinson 1, (gas show reported 100 ft) was abn.

SHELL BEACH*

Section 33-13s-15e. **Means of Discovery:** Seismograph, 1928. **Extent of Development:** Southern Sulphur Co.'s State Lake Borgne 1, dry 1370 ft, 1934. Emerald Petroleum Corp.'s Shell Beach Properties 1, 31-13s-15e, sand showing oil 7246 ft, trouble with hole, pb, set 7-in csg, abn 7380 ft, July, 1936.

ST. CHARLES PARISH

BAYOU DES ALLEMANDS

Centering around Sections 13-15s-20e. **Means of Discovery:** Reflection and refraction seismograph, Amerada Petroleum Corp. and Louisiana Land & Exploration Co., 1935-1936. **Discovery Well:** Amerada and Louisiana Land & Exploration Co.'s State 1, Aug. 1, 1937, 569 bbls 36.1 gravity oil daily, 18/64-in choke, from csg perforated at 6820 to 6830 ft. **Structure:** Salt dome, top of salt 8632 ft. **Producing Formations:** Miocene sands 6820 to 6830 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 109 bbls. **Estimated Ultimate Recovery:** 2,000,000 bbls. **Production Through June, 1938:** 61,905 bbls. **Indicated Remaining Reserve:** 1,938,095 bbls. **Deepest Hole:** Amerada's St. Charles Land Co. 1 dr to 9263 ft in salt, top 9253 ft, set 7-in, 9200 ft, made a series of tests up the hole to 5412 ft, was abn March, 1938. **Casing Program:** Amerada-Louisiana Land, 20-in, 230 ft; 13⅜-in, 2680 ft; 9⅝-in, 7124 ft. **Oil Outlet:** Barge. **Gravity Oil:** 6820-30 ft, 36.1. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholders:** Amerada, Louisiana Land, Felmont Oil Corp. **Remarks:** Louisiana Land found the prospect and farmed it out to Amerada. Was called Black Prince Island.

HAHNVILLE*

Centering Section 13-13s-20e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Shell.

LAKE NETHERLANDS*

Sections 33, 34-14s-22e. **Means of Discovery:** Seismograph, Gulf Refining Co., 1928. **Extent of Development:** Undrilled.

LAKE SALVADOR*

Sections 12, 13, 14, 24-15s-21e; 7, 18, 19-15s-22e. **Means of Discovery:** Seismograph, Gulf Refining Co., Humble Oil & Refining Co. and others, 1928. **Extent of Development:** Undrilled. **Principal Leaseholder:** Delta Securities Co.

ST. ROSE

Southeast corner Twp. 12s-9e. **Means of Discovery:** Report that Shell Petroleum Corp. had located dome here with seismograph not verified. **Extent of Development:** Undrilled.

ST. JAMES PARISH

CONVENT–HESTER†

Centering Section 5-12s-5e. **Means of Discovery:** Reflection seismograph, torsion balance, Shell Petroleum Corp., 1935. **Discovery Well:** Shell Petroleum Corp., Colonial Sugar, Inc. 1, discovered area as salt dome June, 1936, at 7492 ft when salt was encountered. **Structure:** Salt dome. Top of salt 7492 ft. **Extent of Development:** Shell's Colonial Sugar Inc. 1, oil odor 2747 ft, top sand 2708 ft, DST 2691-2747 ft, 10 min, mud and water with salty taste. Faint odor oil 3569-73 ft, 3619-24 ft, DST 4527-34 ft, showed salt water, sand showing oil 6370-83 ft, showed salt water, oil odor 6554-55 ft, also 6829 ft, DST of last two odors showed salt water, top salt 7492 ft, in salt 7522 ft, run geophones in hole, pb 2339 ft, abn Sept., 1936. Same operator's Colonial Sugar 2, dry at 8422 ft in Vicksburg, Dec., 1936. No shows. Continental's Colonial Sugar 1, 46-12s-5e, dr shale 5400 ft July 1, 1938. Same operator's Realty Operators 1, 17-12s-5e, tried to blow out at 7499 ft, fsh July, 1938. **Principal Leaseholders:** Shell. Farm out acreage to Continental Oil Co. **Remarks:** Was called Convent in 1936 Gulf Coast issue.

DONALDSONVILLE*

Centering Section 25-11s-15e, near common corner Ascension, Assumption and St. James parishes. **Means of Discovery:** Reflection seismograph, torsion balance, Shell Petroleum Corp., 1935. **Extent of Development:** Undrilled. **Principal Leaseholders:** Shell, Stanolind Oil & Gas Co., Gulf Oil Corp., Pelican Natural Gas Co.

LA PRICE*

Section 65-12s-15e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Shell.

ST. JOHN THE BAPTIST PARISH

LA PLACE*

West of Frienel, centering Sections 65, 97-11s-7e. **Means of Discovery:** Reflection seismograph, Shell Petroleum Corp., 1937. Humble's shooting did not show structure. **Extent of Development:** Shell's Godchaux 1, 97-11s-7e, dr shale 2600 ft, July, 1938. **Principal Leaseholder:** Shell. **Remarks:** Prospect is reported to have 700 ft of closure.

WEST PONTCHARTRAIN*

Centering w edge Lake Pontchartrain, Twp. 10s-7e. **Means of Discovery:** Torsion balance, reflection seismograph, Shell Petroleum Corp., The Texas Co., 1935. **Extent of Development:** Undrilled. **Principal Leaseholders:** Shell, The Texas Co., Sun Oil Co. W. T. Burton is drilling two wildcats in Lake Pontchartrain.

ST. LANDRY PARISH

ARNAUDVILLE*

Section 44-7s-5e. **Means of Discovery:** Reflection seismograph, torsion balance, Shell Petroleum Corp., 1934; Humble, 1935. **Extent of Development:** Undrilled. **Principal Leaseholders:** Shell and Humble.

CANKTON

Two mi ne of Bosco, centering Section 26-8s-3e. **Means of Discovery:** Reflection seismograph, Superior Oil Co., Shell Petroleum Corp., 1935. Also surface indications. **Discovery Well:** Superior's A. Savoie 1, Dec. 23, 1936, 65 bbls 27 gravity oil daily, 18/64-in choke, 5319½ ft. Later worked over and came in for 28 bbls 28.7 gravity oil daily, Jan. 13, 1937, from perforations at 5320 to 5320½ ft. **Structure:** Dome or nose. **Producing Formations:** Miocene sands, 5316 to 5323½ ft; 5799 to 5801 ft; 5984 to 5990 ft. **Average Sand Thickness:** 6 ft. **Productive Acres:** Included with Bosco. **Daily Production, July 1, 1938:** Included in with Bosco. **Deepest Hole:** Discovery well, drilled to 9428 ft, pb. **Casing Program:** Superior, 10¾-in, 1180 ft; 7-in, below 6000 ft. **Oil Outlet:** Storage. **Gravity Oil:** 5799 ft, 33; 5990 ft, 40.8; 5913 ft, 36. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Superior, Shell. **Remarks:** Was called Bristol in 1936 Gulf Coast issue.

BRISTOL–EAST CANKTON*

Centering Sections 47, 48-8s-4e. **Means of Discovery:** Geophysics, Shell Petroleum Corp. **Extent of Development:** Limited Oil Co.'s

*Prospect. †Salt dome, no production. ‡Gas field.

Miller 1, 47-8s-4e, oil sand 8380-90 ft, abn 9005 ft, June, 1936. Shell Petroleum Corp.'s Boagni 1, 48-8s-3e, trace of oil 8507-15 ft, dry at 9006 ft, May, 1937. Western Gulf Prod. Co.'s Boagni 1, 7-8s-4e, topped Marginulina 7918 ft, abn 9017 ft, June, 1938. **Principal Leaseholders:** Sun Oil Co., Shell Petroleum Corp., Gulf Oil Corp., Louisiana Land & Exploration Co., Superior Oil Producing Co., Adams Louisiana Co. **Remarks:** Sometimes referred to as Sunset.

EUNICE*

Section 14-6s-1e. **Means of Discovery:** Geophysics, Elbof Explorations, Inc., 1928. **Extent of Development:** Elbof's Smith 1, dry 4315 ft: LeDoux 1, dry 4362 ft.

GARLAND*

Sections 48-4s-4e; 6, 13-4s-5e. **Means of Discovery:** Seismograph, Humble Oil & Refining Co., Pure Oil Co., 1929. Torsion balance and reflection seismograph, Stanolind, 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** Humble, Shell Petroleum Corp., Adams Louisiana Corp., Strake Petroleum Corp., Stanolind Oil & Gas Co., Trinity Oil Co. **Remarks:** Sometimes referred to as Palmetto.

KROTZ SPRINGS*

South of Krotz Springs, centering Section 12-6s-7e. **Means of Discovery:** Reflection seismograph, Gulf Oil Corp., 1936. **Extent of Development:** Gulf's Hirsch 1, dry at 8483 ft, Aug., 1937. **Principal Leaseholders:** Gulf, Shell, Texas Co.

LAWTELLE*

SWc 6s-3e; SEc 6s-2e. **Means of Discovery:** Reflection seismograph, 1936, by Humble Oil & Refining Co. failed to indicate structure. Sun Oil Co. worked area with geophysics. **Extent of Development:** Undrilled. **Principal Leaseholders:** Sun Oil Co., Sinclair Prairie Oil Co. Humble dropped acreage after geophysical work.

LEWISBURG*

Centering the town of Lewisburg around Section 9-7s-3e. **Means of Discovery:** Reflection seismograph and torsion balance, Stanolind Oil & Gas Co., 1936, 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Stanolind.

PORT BARRE

Sections 4, 20, 21-6s-5e. **Means of Discovery:** Refraction seismograph, Gulf Refining Co., 1926. **Discovery Well:** The Texas Co.'s Botney Bay Fee 1, 800 bbls, 3765 ft, Feb. 23, 1929. **Structure:** Salt dome, top cap rock 3551 ft, salt 3831 ft. **Producing Formations:** Miocene and Oligocene sands at 3100 to 3850 ft. Flank production 4766 to 4883 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 275. **Daily Production, July 1, 1938:** 2100 bbls. **Estimated Ultimate Recovery:** 9,500,000 bbls. **Production Through June, 1938:** 7,083,139 bbls. **Indicated Remaining Reserve:** 2,416,861 bbls. **Deepest Hole:** Pan American Prod. Co.'s Comier 3, 4-6s-5e, dry, 7213 ft, March, 1936. **Casing Programs:** The Texas Co., 10¾-in, 1100 ft; 7-in, 3300 to 3800 ft. Pan American, 10¾-in, 1025 ft; 7-in, 4700 ft. **Oil Outlets:** The Texas Pipe Line Co., 6-in; Standard's 10-in. **Range of Gravity:** 3100 to 3800 ft, 21 to 23 gravity; 4700 to 4970 ft, 36 gravity. **Rigs Running, July 1, 1938:** Three. **Principal Leaseholders:** The Texas Co., Gulf Oil Corp., Pan American Production Co. **Remarks:** Pan American's Hirsch 1, w flank of field discovered flank production from 4766 to 4883 ft, Dec. 5, 1935.

WASHINGTON*

Sections 17, 38-5s-5e; 68-5s-4e; 61-4s-4e. **Means of Discovery:** Reflection seismograph, Pure Oil Co., 1929. Detailed seismograph, Strake, 1937. **Extent of Development:** C. B. Bunte's Thislewaite 1, 68-5s-4e, dry 7001 ft, in Marginulina, May, 1935. Noxon & Toomb's Boagni 1, 41-6s-4e, slight show of gas 7367 ft, abn 8514 ft, April, 1937. **Principal Leaseholders:** C. B. Bunte, Woodley Petroleum Co., Gulf Oil Corp., Magnolia Petroleum Co., Humble Oil & Refining Co., Shell Petroleum Corp., The Texas Co., Strake Pet. Corp.

ST. MARTIN PARISH

ANSE LA BUTTE

Center 86, 113, 117-9s-5e. **Means of Discovery:** Elevation, gas seeps, paraffine beds. **Discovery Well:** Heywood Bros.' Fee 1, 1350 ft, 1902. **Structure:** Salt dome, salt 240 ft, cap missing. **Producing Formations:** Cap rock and Pliocene sands at 800 to 2500 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 50. **Daily Production, July 1, 1938:** 159 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 942,735 bbls. **Indicated Remaining Reserve:** 67,265 bbls. **Deepest Hole:** Yount Lee Oil Co.'s Hebert 2, quit at 6219 ft, in Miocene. **Casing Programs:** Louisiana Crusader Oil Co., 10¾-in, 500 ft; 6-in, 1650 ft. **Oil Outlet:** Barge. **Gravity Oil:** 23. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholders:** Stanolind Oil & Gas Co., Louisiana Crusader Oil Co., Y. D. Spell. **Remarks:** This is a mushroom type salt dome.

BAYOU BOUILLON

Sections 13, 24-9s-8e; 18, 19-9s-9e. **Means of Discovery:** Gas seeps. **Discovery Well:** O. W. Heywood et al's No. 2, 1902, bailed some oil, 1089 ft. First commercial oil well, Rycade Oil Corp.'s Bayou Bouillon B-2, 400 bbls, 25 gravity oil daily, 3232 ft, July 14, 1928. **Structure:** Salt dome, top cap rock 1504 ft, salt 1609 ft. **Producing Formations:** Miocene sands at 400 ft, 2864-2904 ft, 3000 to 3400 ft and 4260 to 4341 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 35. **Daily Production, July 1, 1938:** None. **Estimated Ultimate Recovery:** 750,000 bbls. **Production Through June, 1938:** 489,000 bbls. **Indicated Remaining Reserve:** 261,000 bbls. **Deepest Hole:** Humble Oil & Refining Co.'s Woodward 1, abn 6471 ft, Jan., 1931, in Lower Oligocene. **Oil Outlet:** Barge. **Gravity Oil:** 25. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Rycade Oil Corp. owns a majority of the field in fee, Southern Oil Co.

GECHO*

Sections 38, 35, 105-8s-5e and nw Twp. 9s-5e. **Means of Discovery:** Surface indications, reflection seismograph, Calcasieu Oil Co., 1926; Shell, 1936; geophysics, Gulf Refining Co. **Extent of Development:** H. J. Weir's DeClouet 1, 108-8s-5e, quit at 2322 ft, Dec., 1924. E. R. Brann's Bank of Lafayette 1, dry 5002 ft, 1933. Shell's Hefaland 1, 35-8s-5e, dry at 9800 ft, Feb., 1937. Shell's Frederick 1, 38-8s-5e, dry at 9500 ft, Jan., 1938. **Principal Leaseholders:** Gulf Oil Corp., Shell Pet. Corp. See Arnaudville.

HENDERSON†

Sections 9, 17, 21-8s-7e. **Means of Discovery:** Reflection seismograph, The Texas Co., 1934. **Structure:** Salt dome, top salt 8848 ft. **Discovery Well:** Texas Co.'s St. Martin Land Co. 9, 21-8s-7e, top salt 8848 ft, dr salt to 8858 ft, pb and set 7⅝-in csg 8666 ft, perforated csg at 8195 ft and 7970 ft, recovered salt water, abn May 12, 1937. **Extent of Development:** The Texas Co.'s St. Martin Land 6, 17-8s-7e, oil show 8850-60 ft, dry 9771 ft; St. Martin Land 7, 17-8s-7e, slight show oil 4400-04 ft, dry 8986 ft; State Plum Bob 1, quit in water sand, 8205 ft, all in 1935; St. Martin Land 8 had showing oil 4753-60 ft; 4900-4904 ft; 5972-75 ft; 6150-61 ft; 6195-99 ft; dr sandy shale showing oil at 6302, top show 6298 ft, stuck drill stem 8160 ft, again at 8213 ft, pb 7667 ft, dr to 8871 ft, and abn July 22, 1936. St. Martin Land 10, 15-8s-7e, dry at 9145 ft, Dec., 1937. St. Martin Land 11, 21-8s-7e, drill stem test 7316 ft, showed trace oil, dr salt water sand 7367 ft, July, 1937. **Principal Leaseholder:** The Texas Co. (10,000-acres).

LAKE MONGOULOUI†

In bed of Lake Mongouloui, Sections 10, 43-9s-9e; also Twp. 10s-9e. **Means of Discovery:** Torsion balance, Calcasieu Oil Co., 1927; geophysics, The Texas Co., 1934. **Structure:** Salt dome, top salt 7540 ft. **Extent of Development:** The Texas Co.'s State 1, 10-9s-9e, had show oil 7281-89 ft, topped water sand 7289 ft, quit at 7548 ft after drilling into salt, Jan., 1936. Same operator's Lake Mongouloui 2, 14-10s-9e, twisted off drill pipe at 7349 ft, pb redrilled to 8909 ft in shale abn Oct., 1936. State 3, 14-10s-9e, top salt 8175 ft, dr to 8208 ft in salt, pb and cored sand showing oil 7798 to 7804 ft, attempted two DST at 7826 to 7850 ft, both failed. DST 7826 to 7850 ft showed mud and gas. Pb 6720 ft and redrilled to 6870 ft, abn Aug., 1937. State 4, 14-10s-9e, topped sand showing oil 7713 ft, drill stem test showed salt water. Drill-stem test 7631-46 ft, showed 180 ft of 34.6 gravity oil and 1626 ft of salt water. Dr to 7988 ft in salt, top salt 7970 ft, abn March, 1938. **Principal Leaseholder:** The Texas Co.

NORTHEAST ST. MARTINSVILLE*

East side Twp. 10s-6e, west side Twp. 10s-7e, 3 mi ne St. Martinsville. **Means of Discovery:** Reflection seismograph, Magnolia Petroleum Co., 1935; Continental Oil Co., 1937. **Extent of Development:** Undrilled. **Remarks:** Referred to as St. John Levert Plantation.

SECTION 28†

Sections 28, 29, 32, 33-9s-7e. **Means of Discovery:** Gas, paraffin dirt. Simms-Hager et al's No. 1 found rock salt at 1250 ft, 1917. **Structure:** Salt dome; top cap rock 1030 ft, top salt 1250 ft. **Extent of Development:** Total 14 tests, all dry. **Deepest Hole:** The Texas Co.'s Iberville 1, 6761 ft, 1930. **Principal Leaseholders:** The Texas Co., Ohio Oil Co. **Remarks:** Also known as Hager Dome.

SPANISH LAKE*

Southwest Twp. 11s-6e. **Means of Discovery:** Torsion balance, Humble Oil & Refining Co.; reflection seismograph, Felmont, Continental, and Stanolind. **Extent of Development:** Undrilled. **Principal Leaseholders:** Humble, Felmont, Stanolind. **Remarks:** Continental dropped acreage in this area after doing geophysical work.

ST. JOHN PLANTATION*

North of Coteau Holmes, centering Section 24-10s-7e. **Means of Discovery:** Reflection seismograph, Continental Oil Co., 1936. **Extent of Development:** Undrilled. **Remarks:** See Northeast St. Martinsville.

ST. MARTINSVILLE

Sections 18, 57-11s-6e, south of St. Martinsville. **Means of Discovery:** Torsion balance, seismograph reflection and surface geology, Tide Water Associated Oil Company, 1934, 1935. **Discovery Well:** Tide Water's Smede 1, 8.4 bbls per hour, 5582 ft, Nov. 4, 1935. **Structure:** Regarded as a deep seated salt dome. **Producing Formation:** Miocene sands, 5545-5582 ft and 7340 to 7354 ft. **Average Sand Thickness:** 45 ft. **Productive Acres:** 100; 70 developed. **Daily Production, July 1, 1938:** 675 bbls. **Estimated Ultimate Recovery:** 2,000,000 bbls. **Production Through June, 1938:** 680,130 bbls. **Indicated Remaining Reserve:** 1,319,870 bbls. **Deepest Hole:** Tide Water's Smedes C-1, dr to 9645 ft in heaving shale, dry, June, 1937. **Casing Programs:** Tide Water Associated Oil Co., 10-in, 1400 to 1500 ft; 7-in, 5551 ft. **Oil Outlet:** Barge. **Range of Gravity:** 5545-82 ft, 32. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Tide Water, Continental Oil Co., Standard of Kansas. **Remarks:** Tide Water's first wildcat and first oil field in Louisiana Gulf Coast, Harrison & Abercrombie's Barros 1-A, quit at 6696 ft, March, 1930, had five sands with oil shows. E. B. Hopkins' Standard of Kansas 1, 83-10s-6e, was dry at 7963 ft, April, 1934. **Heaving Shale:** In Oligocene.

*Prospect. †Salt dome, no production. ‡Gas field.

WEST LAKE VERRET*

Centering Section 11-14s-12e. **Means of Discovery:** Reflection seismograph and torsion balance, Tide Water Associated Oil Co. and Shell Petroleum Corp., 1936 and 1937. **Extent of Development:** Shell and Tide Water's Unit 1, sand and shale slight oil show 8295 ft, salt water sand 8296 ft, sand show oil 8850 ft. Drill stem test showed gas and salt water, oil odor 8770-8801 ft, abn 10,000 ft, April, 1938. Shell's Joanerette Lbr. Co. 1, 14-14s-12e, logged several broken shows 8730 to 9635 ft, dr sand and shale 9800 ft, July, 1938. **Principal Leaseholders:** Tide Water and Shell.

ST. MARY PARISH

BATEMAN LAKE

South of Morgan City, centering Section 21-16s-12e. **Means of Discovery:** Reflection seismograph, Louisiana Land & Exploration Co., 1929; The Texas Co., 1935. **Discovery Well:** The Texas Co.'s State Bateman Lake 1, Dec. 24, 1937, 350 bbls, 33.3 gravity oil daily, 3/16-in choke, from perforations at 10,900 to 10,905 ft. **Type Structure:** Dome. **Producing Formations:** Miocene sands 10,900 to 10,905 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 390 bbls. **Estimated Ultimate Recovery:** 2,000,000 bbls. **Production Through June, 1938:** 74,198 bbls. **Indicated Remaining Reserve:** 1,925,802 bbls. **Deepest Hole:** The Texas Co.'s State 1, discovery well, drilled to 11,879 ft, pb and comp, 10,900 to 10,905 ft. **Casing Programs:** The Texas Co.'s discovery well; 18⅝-in, 60 ft; 13⅜-in, 1742 ft; 7⅝-in, 10,515 ft; 5-in, 11,266 ft. **Oil Outlet:** Barge. **Gravity Oil:** 10,900 to 10,905 ft, 33.3. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** The Texas Co. **Remarks:** The second deepest producing field in Gulf Coast. See Horseshoe Bayou.

BAYOU SALE*

Northwest of Horseshoe Bayou centering around Section 13-16s-9e. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble. **Remarks:** Across the Bayou, Magnolia Petroleum Co. worked in 16s-10e with reflection seismograph in 1935 and dropped acreage.

BELLE ISLE†

Sections 1, 2-18s-10e; 25, 36-7s-10e. **Means of Discovery:** Elevation above marsh. Capt. A. F. Lucas found rock salt in first test at 373 ft, Dec., 1896. Oil shows but no production. **Structure:** Salt dome, top cap rock 145 ft, top salt 150 ft. **Extent of Development:** Total 32 tests for sulphur, salt and oil. **Deepest Hole:** Freeport Sulphur Co.'s Belle Isle 1, quit in salt, 1853 ft, August, 1929. **Remarks:** Salt mining efforts unsuccessful. Sun Oil Co. has lease on 4700 acres around dome.

CHARENTON

East of Charenton and Jeanerette, centering around Sections 30-31-13s-10e, 11, 25-13s-9e. **Discovery Means:** Gas seepage, sulphur water, paraffin beds, torsion balance, The Texas Co., and others. Reflection seismograph, Petty Exploration Co., 1934, for Harry Hanszen. **Discovery Well:** Mike Hogg and Harry Hanszen's Lawes Realty Co. 1, Sept. 6, 1936, 21 bbls 34.9 gravity oil per hour, 5/16-in choke, 7190 to 7215½ ft. Was reworked by Pan American Production Co. and made 400 bbls daily at 7198 to 7203 ft. **Type Structure:** Believed to be deep-seated salt dome. **Producing Formations:** Miocene sands, 1120 to 1138 ft; 1860 to 2010 ft; 2595 ft; 2620 to 2640 ft; 3940 to 3948 ft; 4955 to 4980 ft; 6658-93 ft; 7184 to 7210 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 250; 150 developed. **Daily Production, July 1, 1938:** 3468 bbls. **Estimated Ultimate Recovery:** 10,000,000 bbls. **Production Through June, 1938:** 664,033 bbls. **Indicated Remaining Reserve:** 9,335,967 bbls. **Deepest Hole:** Pan American, drilled to 10,317 ft, pb and comp in new sand 2620-40 ft, Feb., 1938. **Casing Programs:** Pan American, 16-in, 200 ft; 10¾-in, 1400 to 1800 ft; 7-in, 1800 to 7900 ft. **Oil Outlets:** A 4 mi 2½-in line to storage tank on Bayou Teche then barged. **Gravity Oil:** 1124 to 1128 ft, 20.4; 1860-2000 ft, 22.8 to 34.2; 2600 to 2640 ft, 22.6; 3900, 5000, 7100 to 7200 ft, 34 to 36; 6658-93 ft, 43 gravity. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Pan American Production Co., Mike Hogg, Harry Hanszen et al, The Texas Co. **Remarks:** The discovery well had over a dozen shows of oil from 2150 ft to bottom. Pan American purchased 50 percent interest in the field Dec. 7, 1936, consisting of 67 leases or 25,592 acres, and operates the field.

CHILLTRUS ISLAND*

Southeast of Belle Isle, centering Section 20-18s-11e. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1936. **Extent of Development:** Undrilled. **Principal Leaseholders:** Sun.

COTE BLANCHE†

Sections 5, 6, 11, 12, 13, 14-15s-7e. **Means of Discovery:** Elevation above marsh. Rock salt discovery by Southern Salt Synd., 1921. No oil. **Structure:** Salt dome; no cap rock, top salt 298 ft. **Extent of Development:** 64 tests, mostly for salt, all devoid of oil. **Deepest Hole:** Geo. Leland Co.'s Cafferey 1, 1675 ft. **Principal Lease Holders:** The Texas Co.

GLENWILD*

Sections 20, 21-15s-12e. **Means of Discovery:** Seismograph, Louisiana Land & Exploration Co., 1929. **Structure:** More probably structure than salt dome. **Extent of Development:** Through 1933, half-dozen tests, all dry, including old shallow holes. **Deepest Hole:** Shell Petroleum Corp.'s C. A. Barbour 1, 21-15s-12e, electrical device showed 55 ohms and 150 millivolts 10,088-108 ft, gas sand, abn 10,517 ft, Jan. 1938. **Principal Leaseholder:** Shell.

HORSESHOE BAYOU

On Horseshoe Bayou, centering around Sections 37, 40-17s-19e. **Means of Discovery:** Reflection seismograph, Pure Oil Co., 1929; The Texas Co., 1935. **Discovery Well:** The Texas Co.'s Horseshoe Bayou 1, August 12, 1937, 1152 bbls 39.7 gravity oil daily, ¼-in choke, 10,873 ft. **Type Structure:** Believed to be deep-seated salt dome. **Producing Formations:** Miocene sands 10,863 to 10,895 ft. **Average Sand Thickness:** 40 ft. **Productive Acres:** 400; 90 developed. **Daily Production, July 1, 1938:** 819 bbls. **Estimated Ultimate Recovery:** 8,000,000 bbls. **Production Through June, 1938:** 159,268 bbls. **Indicated Remaining Reserve:** 7,840,732 bbls. **Deepest Hole:** The Texas Co.'s Horseshoe Bayou 1, dr to 12,261 ft, blew out caught fire, 7⅝-in csg was set at 10,975 ft, hole was cleaned out and was plugged back and sdtr at 11,325 ft, but pipe became stuck again and the hole was plugged back to 10,759 ft and csg was perforated with 115 holes from 10,870 to 10,890 ft and the well showed salt water. Cement was squeezed through perforations and it was again perforated with 56 holes from 10,863 to 10,873 ft. **Casing Programs:** The Texas Co., 17⅝-in, 59 ft; 13⅜-in, 1496 ft; 7⅝-in, 10,975 ft or 7-in, 11,062 ft. **Oil Outlet:** Barge. **Gravity Oil:** 10,863-895 ft, 39.7.**Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** The Texas Co. **Remarks:** At one time this discovery well was the deepest producing well in the world.

JEANERETTE

Centering Sections 38, 39, 40, 41-13s-9e; 59-13s-8e. **Means of Discovery:** Surface indications, reflection seismograph, Petty Exploration Co., 1935, for Perry Scranton, Harry Hanszen and W. C. Hertel. **Discovery Well:** Herton Oil Co.'s Roane 1, 7512 ft, pb 14 ft to 7492 ft, 25 bbls per hour, ¼-in choke, December 23, 1935. **Type Structure:** Deep seated salt dome. **Producing Formations:** Miocene sands 6609 to 6687 ft; 6723 to 6748 ft; 7010 to 7075 ft, 7492 to 7512 ft; 10,273 to 10,293 ft; 10,412-424 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 250; 220 developed. **Daily Production, July 1, 1938:** 6913 bbls. **Estimated Ultimate Recovery:** 12,500,000 bbls. **Production Through June, 1938:** 4,565,398 bbls. **Indicated Remaining Reserve:** 7,934,601 bbls. **Deepest Hole:** Herton Oil Company's Rognes Sugar Co. 1, 58-13s-8e, drilled to 11,634 ft, abn, February, 1938. **Casing Programs:** Herton Oil Co., 18⅝-in, 90 ft; 10¾-in, 1400 to 1500 ft; 7-in, 6600 ft, 6700 ft, 7000 ft, 7459 ft, 10,480 ft. **Oil Outlets:** Standard Pipe Line Co.'s 6-in. **Gravity Oil:** 6609 to 6687 ft, 36.5; 6741 ft, 30; 7000 to 7075 ft, 38; 7470 ft, 41.6; 10,273-293 ft, 36.6; 10,412-424 ft, 34.6. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Herton Oil Co.

PATTERSON*

Section 21-15s-11e. **Means of Discovery:** Torsion balance, Vacuum Oil Co., Empire Gas & Fuel Co., 1929; checked later with seismograph. **Extent of Development:** Empire and Vacuum's Zenor 1, dry 6365 ft, 1930. **Principal Leaseholders:** Shell Petroleum Corp.

ST. TAMMANY PARISH

COVINGTON–GOODBE*

Sections 9, 10, 20, 21-7s-10e, 33-6s-10e, w and sw of Covington. **Means of Discovery:** Pendulum, Gulf Refining Co., 1935. **Extent of Development:** O. Phillip's Stevenson 1, perforated 1344-55 ft, began flowing wash water and gas March 4, 1938; pressures went up to 50 pounds, well later died and was abn March, 1938. Stevenson 2, drill-stem test 1489 to 1509 ft showed fresh water, abn 2526 ft, April 1, 1938. **Principal Leaseholders:** Gulf Oil Corp. (15,000 acres). **Remarks:** Also known as North Lake Pontchartrain or Mandeville. Gulf surrendered acreage.

NORTH SLIDELL*

Sections 26, 36-8s-14e, ne Slidell. **Means of Discovery:** Seismograph. **Extent of Development:** Danciger Oil & Refining Co.'s Holdsworth 1, 26-9s-14w, show dead oil 3995-4003 ft, slight cut 2397-2424 ft, abnd 6053 ft, February, 1936. **Principal Leaseholders:** Danciger, Gulf Oil Corp., Sun Oil Co., United Gas Co. **Remarks:** Humble Oil & Refining Co. has 15,000 acres centering around 33-8s-15e. Also 6-7-8-9s and 11-14e. Supposed to be dome in this area.

SLIDELL*

Section 24-9s-15e, se Slidell on Louisiana-Mississippi line. **Means of Discovery:** Torsion balance, reflection seismograph, Gulf Refining Co., 1934. **Extent of Development:** Undrilled. **Principal Leaseholder:** Gulf Oil Corp.

TERREBONNE PARISH

BAY ST. ELAINE

Sections 8, 17, 20-22s-18e. **Means of Discovery:** Seismograph, Louisiana Land & Exploration Co., 1927. **Discovery Well:** First gas, The Texas Co.'s Bay St. Elaine (Bay Coon Road) 1, 15 million feet gas at 680 ft, May, 1929. First oil, The Texas Co.'s Bay St. Elaine 7, 30 bbls daily, 2721 ft, March, 1934. It later died. First profitable well was The Texas Co.'s State 14, 20-22s-18e, August 1, 1937, 1004 bbls daily, 29.5 gr., ⅝-inch choke, 5643 ft. **Structure:** Salt dome, cap rock 710 ft, salt 1463 ft. **Producing Formations:** Gas from Pliocene sands, 680 and 791 ft, oil from Pliocene-Miocene sand, 2721 ft. Miocene at 5573 to 5643 ft. **Average Sand Thickness:** (85 ft screen set in first profitable producer). **Productive Acres:** 100; 20 developed. **Daily Production, July 1, 1938:** 225 bbls. **Estimated Ultimate Recovery:** 1,000,000

*Prospect. †Salt dome, no production. ‡Gas field.

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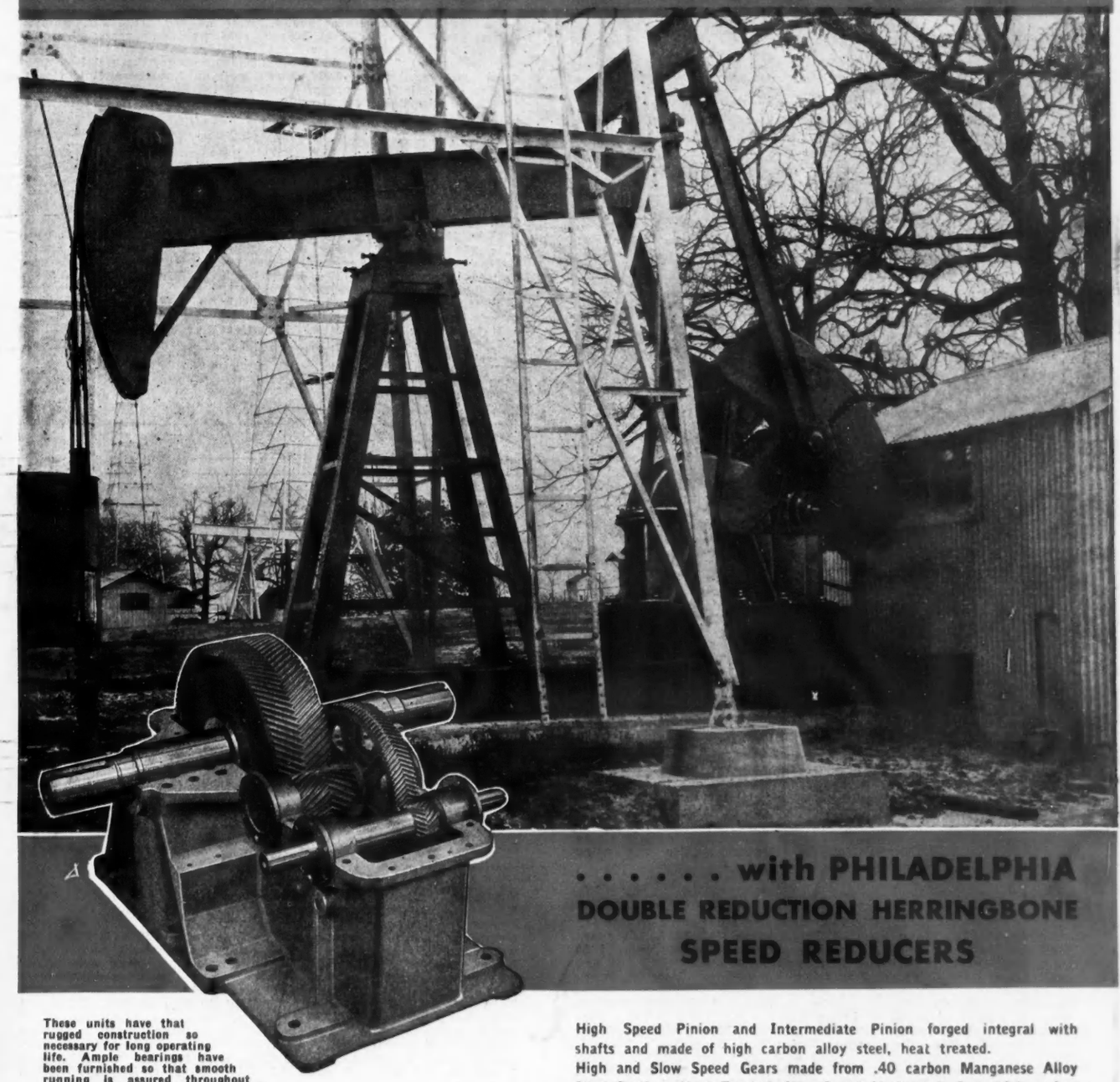

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bbls. **Production Through June, 1938:** 73,142 bbls. **Indicated Remaining Reserve:** 926,858 bbls. **Deepest Hole:** The Texas Co.'s Bay St. Elaine 12, 30-22s-16e, topped salt 7821 ft; abn in salt 7831 ft, September, 1936. **Casing Programs:** The Texas Co., 10¾-in, 1201 ft; 7-in, 5573 ft. **Oil Outlets:** Barge. **Range of Gravity:** 5570 ft, 29.5. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** The Texas Co., with sulphur rights subleased to Freeport Sulphur Co. **Remarks:** Known formerly as Bay Coon Road. **Heaving Shale:** Is found under Section 20-22s-18e, around 5900 ft.

CAILLOU ISLAND

Sections 17, 18, 19, 20-23s-20e. **Means of Discovery:** Refraction seismograph, Louisiana Land & Exploration Co., 1928. **Discovery Well:** The Texas Co.'s Caillou Island 2, Section 18, 1100 bbls 28 gravity oil daily, 3239 ft, January 24, 1930. **Structure:** Salt dome, cap rock 2741 ft, salt 4092 ft. **Producing Formations:** Miocene sands at 3239 to 4981 ft, 5981 ft, 6094 ft, 6620 to 6648 ft, and 6816 to 6840 ft. **Average Sand Thickness:** 90 ft. **Productive Acres:** 600; 400 developed. **Daily Production, July 1, 1938:** 16 949 bbls. **Estimated Ultimate Recovery:** 45,000,000 bbls. **Production Through June, 1938:** 19,334,005 bbls. **Indicated Remaining Reserve:** 25.665,995 bbls. **Deepest Hole:** The Texas Co.'s Terrebonne Bay 2, discovery well for new sand, comp 6862 ft, April, 1936. **Casing Programs:** The Texas Co., 16-in, 100 ft; 10¾-in, 1233 to 1300 ft; 7-in, 3300 to 7000 ft. **Oil Outlet:** Barge. **Range of Gravity:** 3200 ft, 28; 3700 ft, 24.9; 3800 to 3900 ft, 31; 4150 ft, 32.2; 4200-4400 ft, 36 to 38; 4600 to 5100 ft, 36 to 39; 6850 ft, 35. **Rigs Running, July 1, 1938:** None. **Principal Leaseholder:** The Texas Co. **Remarks:** Was called Timbalier Bay. Salt water is pumped in a disposal well.

CASTELL*

Sections 30-17s-14e. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1935. **Extent of Development:** Humble's Continental Land & Fur Co. 1, top pyrite 6792 ft, drilled to 10,254 ft, abn Sept., 1936. **Principal Leaseholders:** Humble. **Remarks:** Sometimes known as Amelia.

DOG LAKE

Sections 5, 6-22s-16e; 31, 32-21s-16e. **Means of Discovery:** Refraction seismograph, Louisiana Land & Exploration Co., 1927. **Discovery Well:** The Texas Co.'s Dog Lake Bayou A-1, 15 bbls, 1062 ft, May, 1929. **Structure:** Salt dome, top cap rock 1506 ft, salt 1730 ft. Reported 2 miles in diameter. **Producing Formations:** Pliocene sand at 1062 ft, Miocene sands 6821 to 6877 ft, 7065 to 7128 ft. **Average Sand Thickness:** 12 ft. **Productive Acres:** 100; 50 developed. **Daily Production, July 1, 1938:** 1680 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 1,342,550 bbls. **Indicated Remaining Reserve:** 3,657,450 bbls. **Deepest Hole:** The Texas Co.'s State Dog Lake 3, 5-22s-16e, quit at 8165 ft, July, 1936. **Casing Programs:** The Texas Co., 10¾-in, 1200 ft; 7-in, 6800 to 7000 ft. **Oil Outlets:** Barge. **Range of Gravity:** 6870 ft, 40; 7065 ft, 39.5; 7104 ft, 38. **Rigs Running, July 1, 1938:** One. **Principal Leaseholder:** The Texas Co. **Remarks:** The Texas Co.'s State 18, Section 5-22s-16e, discovered a new sand December, 1935, at 7128 ft. **Heaving Shale:** Has been found under Section 5-22s-18e.

EAST BAY JUNOP†

Sections 21, 22, 27, 28-21s-14e. **Means of Discovery:** Refraction seismograph, Louisiana Land & Exploration Co., 1927. **Structure:** Salt dome; cap rock 5077 ft, salt found in only one test, 7000 ft. **Extent of Development:** Eight tests, all dry. **Deepest Hole:** The Texas Co.'s State Bay Junop B-6, 34-21s-14e, quit at 7840 ft in salt. June, 1935. **Principal Leaseholder:** The Texas Co. After drilling Bay Junop B-6, The Texas Co. turned the block back to Louisiana Land & Exploration Co. **Remarks:** Also known as Bay Junop, Taylor Bayou.

FOUR ISLE

Sections 13, 14, 24, 26, 23-21s-16e. **Means of Discovery:** Refraction seismograph, Louisiana Land & Exploration Co., 1927. **Discovery Well and Date:** The Texas Co.'s Four Isle 4, 2230 bbls daily, 5639 ft, November 21, 1934. **Structure:** Piercement type dome, top cap rock 557 ft, salt 1381 ft. **Producing Formations:** Miocene sands at 5518-5570 ft; 5611-5639 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 100; 40 developed. **Daily Production, July 1, 1938:** 4 bbls. **Estimated Ultimate Recovery:** 3,000.000 bbls. **Production Through June, 1938:** 292,697 bbls. **Indicated Remaining Reserve:** 2,707,303 bbls. **Deepest Hole:** The Texas Co.'s State 9, 26-21s-16e, dr to 10,725 ft, pb 6965 ft, abn April, 1938. **Casing Programs:** The Texas Co., 10¾-in, 1500 ft; 7 or 9⅝-in, 5580 ft. **Oil Outlet:** Barge. **Range of Gravity:** 5518-70 ft and 5611 to 5639 ft, 44. **Rigs Running July 1, 1938:** One. **Principal Leaseholder:** The Texas Co.

GIBSON

Eleven mi w of Houma, centering Sections 17, 18, 19-17s-15e. **Means of Discovery:** Reflection seismograph, Barnsdall Oil Co., Shell Petroleum Corp., 1936. **Discovery Well:** Shell and Barnsdall's Realty Operators 1-B, February 20, 1937; 781 bbls, 38.1 gravity oil daily, ¼-inch choke, from 9493 ft. **Type Structure:** Dome. **Producing Formations:** Lower Miocene sands 9461 to 9513 ft. **Average Sand Thickness:** 20 ft. **Productive Acres:** 900; 200 developed. **Daily Production, July 1, 1938:** 2049 bbls. **Estimated Ultimate Recovery:** 18,000,000 bbls. **Production Through June, 1938:** 898,134 bbls. **Indicated Remaining Reserve:** 17,101,836 bbls. **Deepest Hole:** Shell's Pelican 1, 35-17s-15e, odor of oil 8880 ft, 8950 ft, 9420 ft, 9503 ft, salt water sands below 10,000 ft, drilled to 10,727 ft, abn August, 1937. **Casing Programs:** Shell, 16-in, 120 ft; 10¾-in, 2499 ft; 7-in, 9470 ft. **Oil Outlets:** Shell Pipe Line Co., 4-in to Black Bayou, then barge. **Gravity Oil:** 37.7. **Rigs Running, July 1, 1938:** Two. **Principal Leaseholders:** Shell, Barnsdall. **Remarks:** Barnsdall leased Southdown Plantation near Houma Townsite prospect and Shell was given half interest in a 12,000 acre block for a 10,000-foot test. Drilled Realty Operators 1, 103-17s-17e, to 10,157 ft before abn, March, 1936. Shell moved to another block which was included in 12,000 acres, 11 mi west of Houma and drilled the discovery well. One of the major discoveries in 1937. Was called Bayou Cocotriz.

HOUMA TOWNSITE*

Section 102, 103-17s-17e. **Means of Discovery:** Geophysics, 1930; reflection seismograph, Barnsdall Oil Co., Shell Petroleum Corp., 1934-35. **Extent of Development:** Louisiana Gas & Fuel Co.'s Minor 1, had gas show 1500 ft, quit at 6500 ft, 1931. Shell's Realty Co. 1, abn 10,157 ft, March, 1936, no shows reported. John P. Bech's Realty Operators 1, 102-17s-17e, gas sand 1365 ft, set csg perforated 1353-63 ft, made 500,000 cubic ft gas daily, now dead, completed Sept., 1936. Fifth well on Louisiana Gulf Coast to dr to 10,000 ft. **Principal Leaseholders:** Shell, Barnsdall, Gulf Oil Corp., The Texas Co. **Remarks:** Surrendered leases in this area after drilling deep test.

LAKE BARRE

Sections 36, 37, 38, 39, 40-21s-19e; 30-21s-20e. **Means of Discovery:** Seismograph, Louisiana Land & Exploration Co., 1928. **Discovery Well and Date:** The Texas Co.'s Lake Barre A-2, 70 bbls hourly, 3849 ft, Sept., 1929. **Structure:** Salt Dome, top cap rock 750 ft, salt 852 ft. **Producing Formations:** Miocene-Pliocene sands at 3645 to 3980 ft. **Average Sand Thickness:** 75 ft. **Productive Acres:** 425; 340 developed. **Daily Production, July 1, 1938:** 1627 bbls. **Estimated Ultimate Recovery:** 20,000.000 bbls. **Production Through June, 1938:** 16,620,697 bbls. **Indicated Remaining Reserve:** 3,379,-303 bbls. **Deepest Hole:** The Texas Co.'s State 37, set 9⅝-in csg 8063 ft, dr to 10,959 ft, pb 2148 ft, dr to 3766 ft, comp as producer, May, 1937. **Casing Programs:** The Texas Co., 16-in, 93 ft; 10¾-in, 918 ft; 7-in, 3650 ft. **Oil Outlet:** Barge. **Range of Gravity:** 3750 ft, 31; 3850 ft, 27. **Rigs Running July 1, 1938:** Two. **Principal Leaseholder:** The Texas Co.

LAKE DE CADE*

Section 24-18s-14e, n of Lake De Cade. **Means of Discovery:** Reflection seismograph, The Texas Co., 1934. **Extent of Development:** Undrilled. **Principal Leaseholder:** The Texas Co.

LAKE PELTO

Sections 12-17s-18e; 8, 9, 17-23s-18e. **Means of Discovery:** Refraction seismograph, Louisiana Land & Exploration Co., 1928. **Discovery Well:** The Texas Co.'s Lake Pelto B-1, 400 bbls, 1391 ft, July, 1929. **Structure:** Salt dome, top cap rock 2801 ft, top salt 2859 ft. **Producing Formations:** Pliocene sands 1250 to 1288 ft, 1350 ft, and 1733 to 1765 ft; Miocene sand 5420-65 ft, 6058 to 6088 ft, 6185 to 6220 ft, 6248 to 6275 ft, 6440 to 6475 ft, and 6648 to 6686 ft. **Average Sand Thickness:** 55 ft. **Productive Acres:** 100; 50 developed. **Daily Production, July 1, 1938:** 1278 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June 1938:** 965.164 bbls. **Indicated Remaining Reserve:** 4,034,836 bbls. **Deepest Hole:** The Texas Co.'s State 14, oil well, 6686 ft, after pb from 7344 ft. **Casing Program:** The Texas Co., 20-in, 142 ft; 13⅜-in, 1550 ft; 7 or 7⅝-in, 5400 to 6700 ft. **Oil Outlets:** Barge. **Range of Gravity:** 1389 ft, 17; 5400, 6050, 6250, 6500 ft, 36; 6650 ft, 40.7. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** The Texas Co. **Remarks:** State Lake Pelto 12, opened a new sand for this field in 1935 and had sands showing oil at 6248 ft, 6422, 6661, 6717 ft and was comp at 6248 ft.

LA TERRE*

South of Lirette field, centering Section 41-19s-19e. **Means of Discovery:** Reflection seismograph, Fohs Oil Company, 1936. **Extent of Development:** Fohs' State 1, se of Lirette, dr to 13,409 ft, pb and testing 11,160 ft, July, 1938. **Principal Leaseholders:** Fohs, Shell Petroleum Corp. **Remarks:** See Lirette.

LIRETTE–HOUMA GAS FIELD

South of Houma. Gas development centered around Sections 5, 6, 7-19s-19e. Oil development around Section 23, 41-19s-19e. **Means of Discovery:** First gas seepage and other surface indications. Later Adams Royalty Co. and Humble Oil & Refining Co. worked on the flanks with reflection seismograph and torsion balance in 1935. **Discovery Well and Date:** No records were taken of the first gas production in the area but the area did furnish the supply for the town of Houma. This has been depleted however. Over 30 wells were drilled in the district. First oil well was Humble Oil & Refining Co.'s Ellender 1, perforated 11 shots 11,620 to 11,630 ft, May 11, 1937, came in making 40 bbls per hour 39 gravity oil, started making 25 percent salt water. Killed and perforated May 18, 1937, with 9 shots from 11,610 to 11,615 ft and May 20 made 35 bbls per hour, 37.5 gravity oil through ¼-inch choke. Started making salt water and was pb and comp at 10,525, making gas and distillate, Oct. 1937. **Type of Structure:** Dome. No salt has been reached. **Producing Formations:** Gas from Pliocene sands 2300 to 3000 ft; oil from Miocene sands 10,525 ft, 11,610 to 11,630 ft. **Average Sand Thickness:** 25 ft. **Productive Acres:** 150; 20 developed. **Daily Production, July 1, 1938:** 21 bbls. **Estimated Ultimate Recovery:** 1,000,-000 bbls. **Production Through June, 1938:** 35,022 bbls. **Indicated Remaining Reserve:** 964,798 bbls. **Deepest Hole:** Fohs Oil Co.'s State Bay Baptiste 41-19s-19e, dr to 13,409 ft, second deepest well in the world, pb July to 11,160 ft to test. Humble's Ellender 1, shows 8100 ft, 8194 ft, 8385 ft, 8450 ft, set 9⅝-in at 8735 ft, longest string of this size in world at this time; odor gas 9200 ft; cored broken formations with shows 10,794 to 10,846 ft; 7-in set at 12,097 ft, longest string of this size at time; reached total depth of 12,165 ft; perforated 12,013 to 12,018 ft, only one shot went off out of 11, deepest well in world to be perforated; well showed salt water; pb and tested 11,620 to 11,630 ft, made oil, gas and salt water. Casing pressure 5000 pounds; killed and was tested again and finally comp at 10,525 ft. See discovery well. **Casing Programs:** Humble's discovery well; 26-in, 38 ft; 20-in, 260 ft; 13⅜-in, 2824 ft; 9⅝-in, 8730 ft; 7-in, 12,097 ft. Second well; 20-in, 62 ft; 13⅜-in, 2819 ft; 9⅝-in, 9017 ft. **Oil Outlets:** Barge. **Gravity Oil:** 11,610 to 11,630 ft, 35 to 39. **Rigs Running, July 1, 1938:** One. **Principal Leaseholders:** Humble, Gulf Oil Corp., United Production Co. and Terrebonne Gas Co. **Remarks:** Lirette at one time was the deepest producing field in the world and set many records while drilling to 12,165 feet.

*Prospect. †Salt dome, no production. ‡Gas field.

MINOR*

Section 3, 10-18s-16e. **Means of Discovery:** Seismograph, United Gas Public Service Corp., 1931. **Structure:** Appeared structure-type like nearby Houma gas field rather than salt dome. **Extent of Development:** United's Minor Estate 2, had gas show 3875 ft, quit 6002 ft, 1932. Shell's Realty Operators 1-C, 10-18s-16e, dr shale 9100 ft, July, 1938. **Remarks:** See Houma Township.

NORTH BOURG*

North of Bourg, centering around Section 36, 41-17s-18e. **Means of Discovery:** Reflection seismograph, Barnsdall Oil Co., 1937. **Extent of Development:** Barnsdall's Barrow 1, 41-17s-18e, dr shale 7754 ft, July, 1938. **Principal Leaseholders:** Barnsdall.

NORTH GIBSON*

North of Gibson field, centering around Section 110-16s-15e. **Means of Discovery:** Reflection seismograph, Barnsdall Oil Co., and Sun Oil Co., 1936. **Extent of Development:** Barnsdall Oil Co.'s Dibert, Stark and Brown 1, dry at 10,777 ft, Nov., 1937. **Principal Leaseholders:** Barnsdall Oil Co., Sun Oil Co.

POINTE AU FER*

Section 12-21s-12e. **Means of Discovery:** Torsion balance, Freeport Sulphur Co., 1930, and checked later with seismograph. **Extent of Development:** Freeport's Nelson 1, quit at 6023 ft, 1930; no important showings.

SOUTH DULAC*

West of Dulac prospect, centering Section 25-20s-16e. **Means of Discovery:** Reflection seismograph, The California Co., 1937. **Extent of Development:** Undrilled. **Principal Leaseholders:** The California Co.

SOUTH HOUMA*

South of Houma, centering Section 18-18s-17e, 73-18s-18e. **Means of Discovery:** Geophysics by several companies. Shell Petroleum Corp., reflection seismograph, 1937. **Extent of Development:** Shell's Peters 1, 73-18s-18e, dr shale 7486 ft, July, 1938. **Principal Leaseholders:** Shell, Union Producing Corp., Humble Oil & Refining Co., Barnsdall Oil Co., Gulf Oil Corp., Fohs Oil Co. **Remarks:** In townships 13, 14, 15, 16, 17, 18, 19e, range 17, 18, 19, 20s, there was considerable leasing activity in 1937. Several major companies shot the area and located some domes. This active leasing play followed the discovery of Gibson, Lirette, Lake Long, Bateman Lake.

WEST DULAC

West of Dulac, centering around Section 77-19s-17e. **Means of Discovery:** Reflection seismograph, Fohs Oil Co., 1936 and 1937. **Discovery Well:** Fohs Oil Co.'s Buckley Bourg 1, 50 bbls 47 gravity distillate daily, 350,000,000 cubic ft gas daily open flow, June 18, 1937, 13,254 to 13,266 ft. Was killed and comp. June 27, 1938, flowing 125 bbls 47 gravity distillate daily, 12/64-in choke, tubing pressure 4100 pounds. **Type Structure:** Dome. **Producing Formations:** Miocene sands 13,205 to 13,280 ft. **Average Sand Thickness:** 80 ft. **Productive Acres:** Discovery well. **Daily Production, July 1, 1938:** 125 bbls. **Estimated Ultimate Recovery:** 1,000,000 bbls. **Production Through June, 1938:** 500 bbls. **Indicated Remaining Reserve:** 999,500 bbls. **Deepest Hole:** Fohs Oil Co.'s Buckley Bourg 1, dr to 13,333 ft, logged possible producing sands 11,630 to 11,666 ft, odors of oil 12,353 to 12,365 ft, set seven-inch casing at 11,640 ft, 5-inch at 13,333 ft. Casing was perforated 20 shots 13,254 to 13,266 ft, comp as discovery well. **Casing Programs:** Fohs Oil Co., 26-in, 60 ft; 18⅝-in, 310 ft; 13⅜-in, 3250 ft; 7-in, 11,640 ft; 5-in liner, 13,333 ft. **Oil Outlets:** Barge. **Gravity Oil:** 13,254 to 13,266 ft, 47 gravity. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Fohs Oil Co., Delarge Oil Co. **Remarks:** The discovery well is the deepest producing and the third deepest hole in the world. Set several records; first 13,200-foot production in South Louisiana. May yield oil after gas is off.

VERMILION PARISH

ABBEVILLE

Centering around Sections 20, 66-67-12s-3e. **Discovery Means:** Geophysics, Humble Oil & Refining Co., Atlantic Oil Producing Co., 1929; reflection seismograph, Stanolind Oil & Gas Co., 1935; Gulf Oil Corp. and Continental Oil Co. worked the area with reflection seismograph in 1934-35. **Discovery Well:** Continental's Hebert 1, March 14,1937, 25 bbls distillate daily from perforations at 7666 to 7675 ft. First commercial producer was Continental's Brookshire 1, 20 bbls, 41.5 gravity oil per hour, 3/16-in choke from perforations at 7884 to 7890 ft, November 4, 1937. **Type Structure:** Faulted dome. **Producing Formations:** Miocene sands at 6424-28 ft; 7666 to 7675 ft and 7870 to 7890 ft. **Average Sand Thickness:** 10 ft.**Productive Acres:** 500; 60 developed. **Daily Production, July 1, 1938:** 512 bbls. **Estimated Ultimate Recovery:** 5,000,000 bbls. **Production Through June, 1938:** 123,139 bbls. **Indicated Remaining Reserve:** 4,876,861 bbls. **Deepest Hole:** Continental's Hebert 1, 7-in 10,947 ft, dr to 12,216 ft, showed high gas pressure at 11,735 and 12,000 ft, pb and made several tests and finally completed at 7675 ft. **Casing Programs:** Continental, 18⅝-in 240 ft, 13⅜-in 1882 to 2100 ft, 7 or 7⅝-in 10,947 to 11,316 ft, 5-in 11,795 ft. **Oil Outlets:** Short 4-in line to river, then barge. **Gravity Oil:** 7884-90 ft, 41-42; 7666, 66 degrees; 6424-28 ft, 38.9. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Continental, Gulf, Stanolind, Humble. **Remarks:** This prospect was originally owned by Atlantic Oil Producing Co. and was assigned to Continental. Hebert 1, the first 12,000-ft hole in South Louisiana, set a long string of 7-in

*Prospect. †Salt dome, no production. ‡Gas field.

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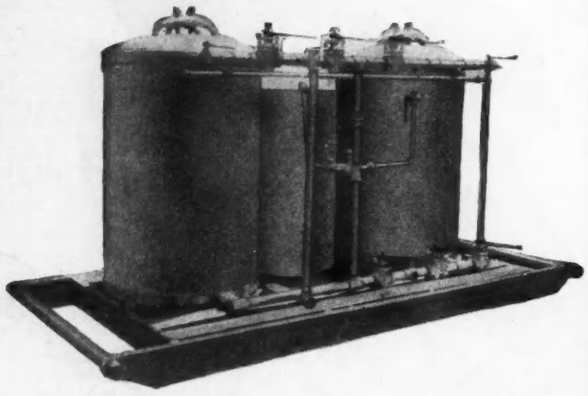

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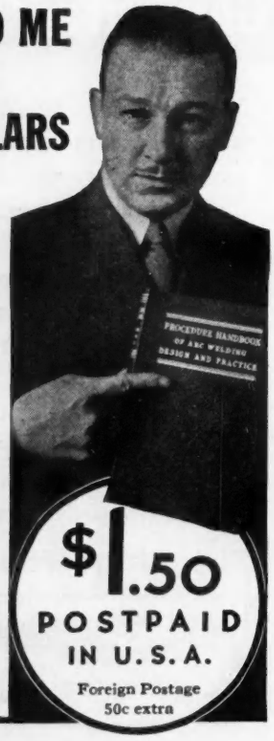

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ANDREWS*

Sections 14, 15, 22, 23-11s-2e. **Means of Discovery:** Reflection seismograph, Gulf Refining Co., 1934. Perry Scranton, 1935. **Extent of Development:** Undrilled. **Principal Leaseholder:** Perry Scranton.

EAST GUEYDAN*

East of Gueydan field, centering Section 27-11s-1e. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble.

ERATH*

Southwest of Erath, centering Sections 21, 41-13s-4e. **Means of Discovery:** Reflection seismograph, The Texas Co., Tide Water Associated Oil Co., Drunella Oil Co., 1936. **Extent of Development:** Drunella Oil Co.'s Caldwell 1, quit at 8105 ft, Feb., 1937. **Principal Leaseholders:** Drunella, The Texas Co., Tide Water Associated.

GUEYDAN

Sections 27, 34-11s-1w. **Means of Discovery:** Refraction seismograph, Pure Oil Co., 1929. **Discovery Well:** Pure's Alliance 2, 200 bbls, 3552 ft, April, 1932. Later deepened, 800 bbls, 4009-4029 ft. **Structure:** Salt dome, top anhydrite 4772 ft, salt 5800 ft. **Producing Formations:** Miocene sands at 3532 to 3565 ft and at 3988 to 4299 ft. **Average Sand Thickness:** 30 ft. **Productive Acres:** 75; 50 developed. **Daily Production, July 1, 1938:** 436 bbls. **Estimated Ultimate Recovery:** 1,500,000 bbls. **Production Through June 1, 1938:** 810,330 bbls. **Indicated Remaining Reserve:** 689,670 bbls. **Deepest Hole:** Pure's Alliance 6, dr to 9543 ft, pb 5200 ft, dr 6301 ft, pb 5722 ft, abnd, Feb., 1936. **Casing Programs:** Pure Oil Co., 13⅜-in, 1250 ft; 5½ or 7-in, 3500 to 4300 ft. **Outlet:** Pure Pipe Line Co.'s 8-in to Inter-Coastal Canal, barge. **Range of Gravity:** 3550 and 4050 ft, 28; 4161 ft, 30. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Pure Oil Co., Sun Oil Co.

INTERCOASTAL CITY

Sections 65, 89-14s-3e. **Means of Discovery:** Reflection seismograph, Stanolind Oil & Gas Co., 1935, 1937. **Extent of Development:** Stanolind's Fred Stovall 1, 13⅜-in csg 1980 ft, dr open hole to 12,128 ft, abn Jan. 29, 1937. **Principal Leaseholder:** Stanolind. **Remarks:** Stanolind's well holds record for open hole.

SOUTHWEST AVERY ISLAND*

Southwest of Avery Island, centering around Section 6-14s-5e. **Means of Discovery:** Reflection seismograph, Fohs Oil Co., 1935 and 1936. **Extent of Development:** Undrilled. **Principal Leaseholder:** Fohs Oil Co. has 10-year paid-up lease on 4000 acres.

WEST GUEYDAN

West of Gueydan field, centering Section 5-12s-2w. **Means of Discovery:** Reflection seismograph, Magnolia Petroleum Co., 1934. Salt Dome Oil Corp., The Texas Co., and Pure Oil Co. worked in the area with torsion balance. **Discovery Well:** Magnolia's Ferguson 1, July 1, 1938, 75 bbls 62 gravity distillate and 2,300,000 cu ft of gas daily from 7150 ft. **Structure:** Dome. **Producing Formation:** Miocene 7140 to 7150 ft. **Average Sand Thickness:** 10 ft. **Productive Acres:** Only the discovery well. **Daily Production, July 1, 1938:** 75 bbls. **Estimated Ultimate Recovery:** No estimate. **Deepest Hole:** Discovery well, dr to 9144 ft, pb. **Casing Programs:** Magnolia, 18⅝-in, 164 ft; 13⅜-in, 3084 ft; 7-in, 7130 ft. **Oil Outlet:** Storage. **Gravity Oil:** 7140 to 7150 ft, 62 gravity. **Rigs Running, July 1, 1938:** None. **Principal Leaseholders:** Magnolia, Stanolind Oil & Gas Co., Gulf Refining Co.

WHITE LAKE*

Sections 8, 9, 10, 16, 17-15s-1e. **Means of Discovery:** Seismograph, Louisiana Land & Exploration Co., Gulf Refining Co., Shell Petroleum Corp., Humble Oil & Refining Co., 1929, 1935. **Extent of Development:** Shell's Herbert 1, 10-15s-1e, quit at 7606 ft, 1933.

WEST BATON ROUGE PARISH

ERWINVILLE*

Near Erwinville, centering Section 25-6s-10e. **Means of Discovery:** Reflection seismograph, Sun Oil Co., 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Sun.

PORT ALLEN

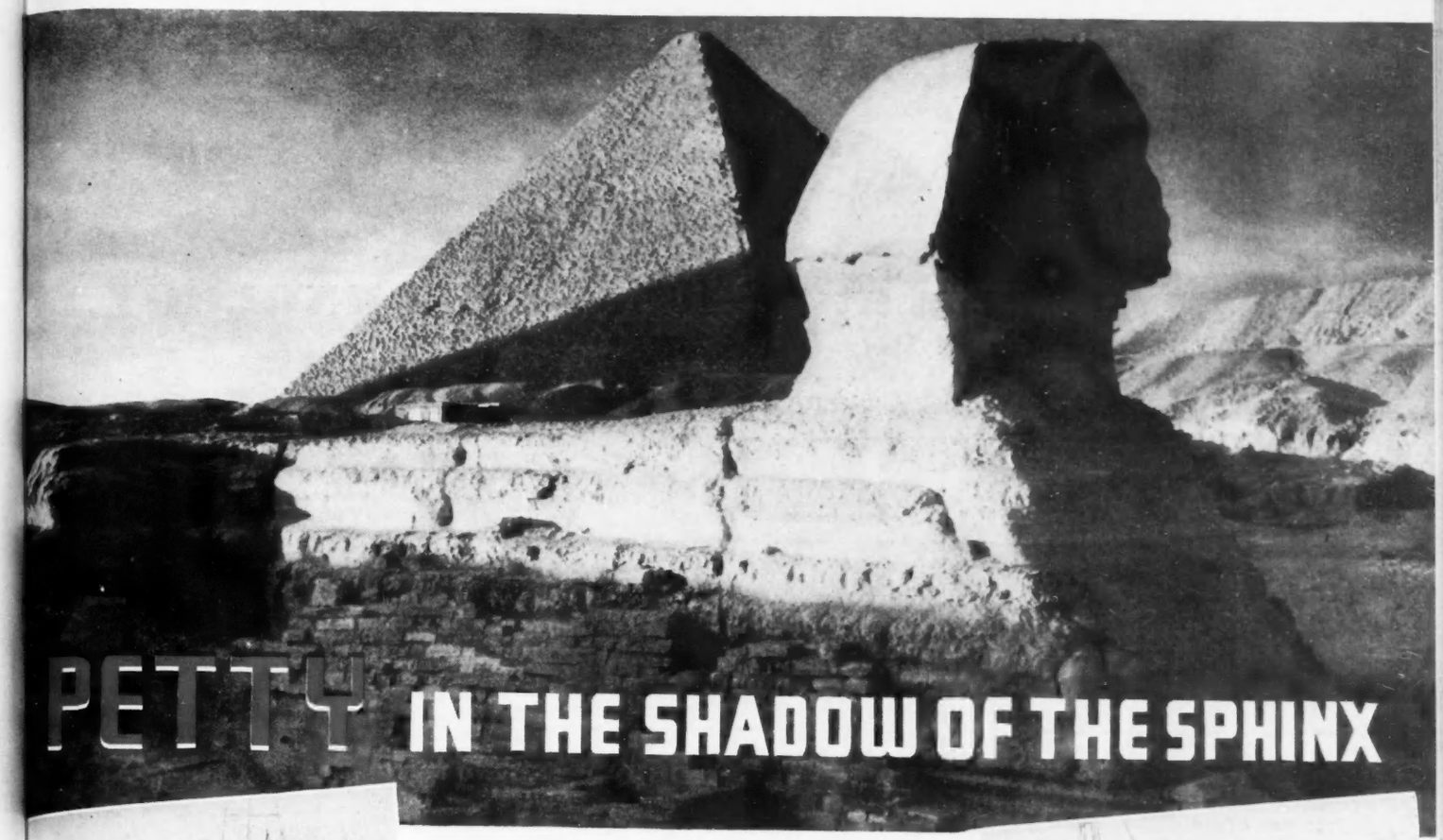
South of Beaulieu, centering 75-7s-12e, and 5-8s-12e. **Means of Discovery:** Reflection seismograph, Humble Oil & Refining Co., 1934, 1937. **Extent of Development:** Undrilled. **Principal Leaseholder:** Humble.

WEST FELICIANA PARISH

WEYONKA*

Near Weyonka and centering Section 54-1s-4w, 1s-3w. **Means of Discovery:** Torsion balance, Vincent & Welsh, 1937. **Extent of Development:** Southern Minerals Corp.'s Wood 1, stuck drill pipe 1185 ft, abn April, 1936. Skidded rig 20 ft ne and Wood 3 was abn at 1600 ft June, 1936. **Principal Leaseholders:** Colonel Morris, California Co.

*Prospect. †Salt dome, no production. ‡Gas field.



PETTY IN THE SHADOW OF THE SPHINX

When, 13 years ago in the Gulf Coast salt dome belt, we made our first Seismic Survey, we were unmindful of the Geophysical history in the making. In the years that have followed that pioneering experience, Petty Geophysical parties have explored for oil in many lands, under practically every possible condition . . . in mountains and jungles, on water and desert. Those 13 interesting and colorful years which marked phenomenal progress of a new science to perfection reflect also one of the most interesting and colorful periods of Oil Industry history.

Photographs reproduced on this page were made by a Petty Geophysical party now exploring in Egypt for the Socony-Vacuum Oil Company.

PETTY GEOPHYSICAL ENGINEERING CO.

SAN ANTONIO, TEXAS, U. S. A.

"THIRTEEN YEARS' SEISMOGRAPH WORK WITH NO DISSATISFIED CLIENTS"

WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Mexican Situation

Cordell Hull says expropriation is confiscation . . . "Settlement of oil question hopeless," Cardenas says . . . Tanker loaded with Mexican gasoline seized

CORDELL HULL, secretary of state for the United States, issued July 21 a formal statement to the Mexican government which can be considered only as a severe rebuke to that government for its dilatory attitude toward foreign obligations. And although the statement was motivated by Mexico's tardiness in making settlement for farms and ranches expropriated in Mexico from Americans, opinion in certain parts of Washington is that Hull's message to Mexico is a prelude to a similar attitude Washington will officially express on the subject of Mexico's expropriation of oil properties there controlled by Americans prior to President Cardenas' decree of March 18 expropriating those properties.

Mexican Ambassador Francisco Castillo Najera was called to the state department to receive the note from Hull to Mexico. Press dispatches state the jovial Mexican emerged from Hull's sanctum sanctorum after an hour's stay with beads of perspiration on his forehead and glumly refused to make a comment to reporters.

Intentions Don't Count

"The taking of property without compensation is not expropriation. It is confiscation. It is no less confiscation because there may be expressed intent to pay at some time in the future," Hull's note said.

England, it will be remembered, has already severed diplomatic relations with Mexico. An aroused Washington is not totally incapable of similar action.

Hull proposed in his note that there be submitted to arbitration the question of whether there has been compliance by the government of Mexico with the rule of compensation (cash on the barrel head) as prescribed by international law in the case of Americans whose farm and agrarian properties in Mexico have been expropriated by the government since August 30, 1927, and if not, the amount of, and terms under which, compensation should be made by the government of Mexico.

"My government proposes," Hull wrote, "that this arbitration be carried out pursuant to the provisions of the general treaty of arbitration signed at Washington January 5, 1929, to which both our countries are parties." The treaty referred to stipulates that each party shall nominate two arbitrators, only one of which shall be a national or selected from persons whom the disputants have named as permanent members of the court of arbitration at The Hague.

The Issue

Hull said that the issue between the Mexican and American governments is not whether Mexico should pursue economic and social policies designed to improve the standard of living of Mexicans, but that the issue is whether in pursuing those policies the properties of Americans may be taken by the Mexican government without making prompt payment of just compensation to the owner in accordance with the universally recognized rules of law and equity.

"Settlement of the Mexican oil question is at present hopeless because the government and the companies are not negotiating," said President Cardenas, who announced recently that the inventories of the firms' properties have been completed and that valuation of their holdings will be finished in about two months, a telegram received by THE OIL WEEKLY July 21 from Mexico City stated. Both of these actions are designed to determine the amount of expropriation indemnification due the foreign controlled oil companies involved in the decree of March 18.

"Cardenas revealed," the telegram continued, "that the daily productive capacity of all wells under government control, that is, most of the wells in Mexico, is some 150,000 barrels, but he said nothing about the actual production of these wells, although he did reveal that the refineries are treating 90,000 barrels of crude daily."

Committee Complains

The federal committee of Mexico that completed inventories of the firms' properties with the object of ascertaining the amount of indemnification accused the oil companies of a deliberate lack of cooperation with the committee in its work. It declared that the companies had previously promised such cooperation, according to a telegram received July 22. The message continued:

"Oil executives failed to even acknowledge repeated invitations to participate in making the inventories, the committee charges. Petroleos Mexicanos, the official government oil administrative company, has been formally constituted and given charge of the expropriated companies' properties."

Couldn't Cooperate

In connection with citation of the companies' reticence, if any, to participate in evaluation of the properties, it was previously pointed out in THE OIL WEEKLY that the matter was not regarded in oil circles as completely beyond the realm of litigation. It may be that the oil company counsel, who have not admitted the alleged legality of Cardenas' move in expropriating, felt that for the companies to have allowed company auditors to have assisted the federal committee in its work may have been construed by Mexican courts and government officials as an acknowledgment on the part of the oil companies of the possibility of a certain amount of legality in Cardenas' action March 18. "If recovery of the properties is desired," one man said, "the companies' counsel would have been stupid to have advised such cooperation."

One Large Deal

Mexico's government controlled press releases since expropriation have been replete with official declarations to the effect that Mexico will pay, that Mexico will honor her debts. According to the government's announced plans, provision for payment for the expropriated properties was to be generated largely by sales of crude and refined products to countries abroad. Much vague information, but little specific information, has come forth from Mexico City since April regarding deals made by the government's organization for exporting petroleum. One sizeable deal, that of about 10,000,000 barrels to W. R. Davis interests, for shipment primarily to Germany, 40 percent cash, 60 percent in trade, has been reported.

Opinion was expressed, at the time official Mexico inferred her exports would be the ace in the hole to take care of expropriation indemnity, that England, previously one of Mexico's best customers for crude, would not be

prone to relish buying oil which Downing Street, as well as one of England's industrial pride and joys, the parent organization of Compania Mexicana de Petroleo, "El Aguila," S.A., already regarded as confiscated, if not stolen, property. The same reticence toward purchasing Mexican crude was expected to be felt by American interests. Generally, the expectations have materialized.

Tanker Seized

Furthermore, it was pointed out that if Mexico persisted in divesting foreigner operators there of rights they felt entitled to under Mexican and international law, those foreigners would, if denied what they considered equitable treatment in Mexican courts, attempt to invoke international law. They tried it once, tying up the tanker San Ricardo when she docked for repairs at Mobile, Alabama. The attempt was not successful, American courts ordering the San Ricardo released.

But last week a somewhat different outcome was predicted when Bataafsche Petroleum Maatschappij, a Royal Dutch Shell subsidiary, was responsible for seizure of the Swedish tanker Lundgren at the port of Hansweert. Bataafsche contended, effectively enough to tie up the ship, that Cardenas' expropriation was illegal and that the oil aboard the Lundgren was property of El Aguila, another Shell subsidiary against which Bataafsche held claims. Outcome of the case will have an important bearing on just how much financial aid the current regime in Mexico may expect from petroleum exports. Associated Press dispatches, incidentally, stated the Lundgren, along with the tanker Mariana, sailed from Mexico late in June under sealed orders with gasoline believed to have been destined for Germany.

Propaganda For and Against

Meanwhile, considerable propaganda and controversy continues to crop up on both sides of the fence. Pro-oil company argument is that the Mexican and international laws have been violated by Cardenas and the courts of Mexico in taking over the $400,000,000 foreign controlled portion of the oil industry. Mexican argument, on the other hand, does not consume much time in attempting to establish the legality of the expropriation, but bears down on the contention that Cardenas was forced to resort to expropriation as the only means of upholding the dignity of his government and holds forth the veiled threat that a democratic Mexico is undoubtedly a better, more sincere neighbor than a fascist Mexico.

Warren-Payne Violation

In telling of the illegality of Cardenas' move, T. R. Armstrong, legal counsel for Standard Oil Company of New Jersey (parent to the expropriated Huasteca Petroleum Company) cites violation of the rule of international law restated in the Warren-Payne negotiations between the United States and Mexico in 1923 wherein it was stated that "unless payment is made in cash at or prior to the time when the owner is separated from his property, it is not compensation within the meaning universally recognized by law." This conception, as a matter of record, was agreed to by the Mexican and United States commissions at the time and was approved by the presidents of both nations.

"The failure of Mexico to conform with any one of the necessary conditions laid down by the department of state," says Armstrong, "is a Mexican admission that Mexico cannot legalize by compensation the unlawful seizure effected under the executive decree of March 18."

Missed the Point

Harry Sinclair, whose interests in Mexico have also suffered from the current wave of nationalization and attendant expropriation, is credited with observing: "No plan yet advanced shows a realization for the necessity for considering what is primarily one of the most important elements in the controversy, namely, labor."

Somewhat at variance with Sinclair's observation is the expressed opinion that labor has been a cat's-paw for political ambition in Mexico, that though expropriation was excused by Cardenas on the grounds that the oil companies would not meet labor's demands, those demands have not been met since the government took the reins of the oil industry.

Referring back to the first paragraph of this item, wherein it was stated that valuations of the companies' holdings would be finished in about two months by the Mexican government, Judge Armstrong recently told the Institution of Public Affairs at the University of Virginia that Mexico's systems of valuation, even if lawful expropriation had taken place, are calculated to reduce the value of the properties to the vanishing point.

"Mexico is simply relying on the hope," he said, "that the good neighbor policy would enable it to get away with the confiscation of American-owned and foreign property, in violation of the Morrow-Calles agreement of 1927 and in violation of the elementary rules of international law."

Not Finding New Oil

Mexican business has been disorganized since expropriation took place a little over four months ago. The peso prior to March 18 was steady at 3.60 to the U. S. dollar. Since then it has dropped, on occasions in Mexico City, heart of the banking industry of that nation, to as low as better than five for one U. S. dollar. It has never returned to a value near the 3.60 quotation. Now, Mexico is reported trying to persuade Costa Rica, Nicaragua, Guatemala, Honduras and Salvador to link their currencies with hers and stabilize them in terms of each other at five to an American dollar. The theory of the Mexican financiers is that thereafter the Latin American currencies would rise and fall against the dollar together. A Washington columnist says the Mexican objective is to stimulate its trade with Central America at the expense of the United States, both in business and in prestige.

Perhaps one of the most serious results of the economic disorder and paucity of funds in Mexico, so far as the oil industry is concerned, is that Mexico has been unable to carry on since March 18 the amount of exploratory work necessary to assure her a continuous supply of crude oil. Cardenas may realize this, for he has urged the people of Mexico to "get together with a little sacrifice the amounts necessary for new sources of production by the workers . . . The workers can contribute the savings imposed for the benefit of their own class, since if they do not do so the country will continue being subject to a feeble industry and to keep its people in poverty."

Canadian Fields

Lethbridge wildcat bailing crude while drilling. Southern Alberta has 15 active exploratory tests. Pouce Coupe structure project has thin oil sand.

CANADIAN oil interest last week was centered on Lethbridge structure, Southern Alberta, where Lethbridge Southern's wildcat on Legal Subdivision 8, Section 1, Township 8, 21-w4, was reported bailing a considerable quantity of crude oil with drilling fluid after drilling 12 feet into the Madison limestone, topped at 3995 feet. Commercial production at this test would have an important bearing on Southern Alberta development and would be certain to bring a lively drilling campaign, because of the shallow depth at which the Madison limestone is encountered, compared to the Turner Valley field. The wildcat was started in April on the farm of E. Foxland, and its depth at this date establishes a record for rapid drilling for an Alberta wildcat.

Go Deeper at Highwood-Sinclair

Besides the Lethbridge Southern test, 15 wildcats were active on as many Alberta structures last week. Several commanded more than usual interest: On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Petroleums Ltd.'s Banner 1, Legal Subdivision 6, Section 34, Township 17, 3-w5, made slow progress during the week drilling in an extremely hard formation believed to be the capping of the porous Madison limestone. Bottom was at 6027 feet. This well produced a small amount of crude several weeks ago from a formation comparable to the upper Madison porous horizon found in Turner Valley.

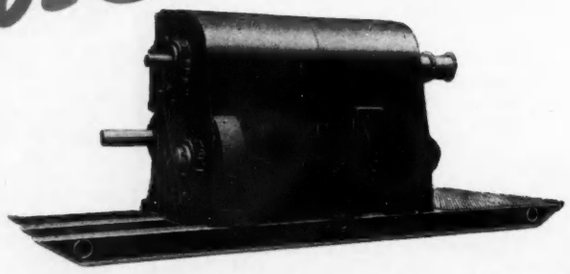
Guardian Oils Ltd.'s wildcat on the Pouce Coupe structure, farthest north test drilling in Alberta, encountered a thin oil sand at 938 feet, materially encouraging operators who are prepared to carry this wildcat to 4200 feet, the lower Cretaceous sands. Hole was being made below 1000 feet last week. Location is Section 7, Township 80, 12-w6. One other test is being made on this structure, some distance from Guardian Oils wildcat, Batcheller Syndicate's 1, Section 24, Township 79, 12-w6, now waiting at 1220 feet.

[*Continued on page 253*]

• • in Bridgeport Gulf Coast stores the operator will find an experienced and enthusiastic organization of supply men, backed by stocks of equipment suited to the particular conditions and requirements of the territory.

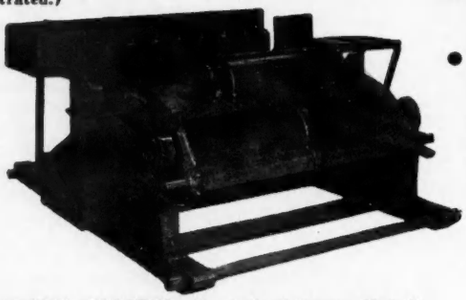
for Example

- **TRAVELING BLOCKS**
  (In stock at Corpus Christi)
  This 202 Ton Gumbo Buster Traveling Block with 5-Manganse Steel Sheaves is popular with Gulf Coast operators.

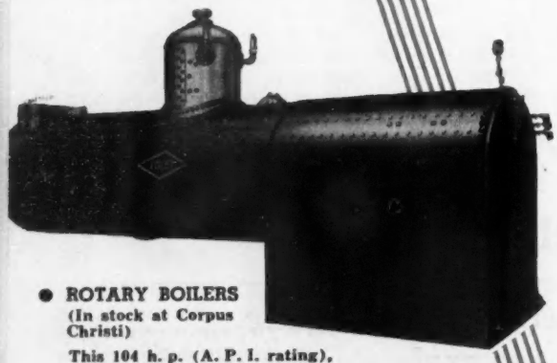


- **ROTARY DRILLING LINES**
  (At lowest prices in years)
  Corpus Christi stocks include these sizes: 1" x 1350 and 1450 feet long. 1¼" x 1250, 1350 and 1450 long.

- **ROTARY DRAW WORKS** (In stock at Corpus Christi)
  This is the largest, strongest and one of the most flexible Draw Works made (Gumbo Buster Unit Jack Shaft Type No. 1805), designed to easily and safely handle the long strings of heavy drill pipe and casing used in deep Gulf Coast drilling. (Rear view illustrated.)



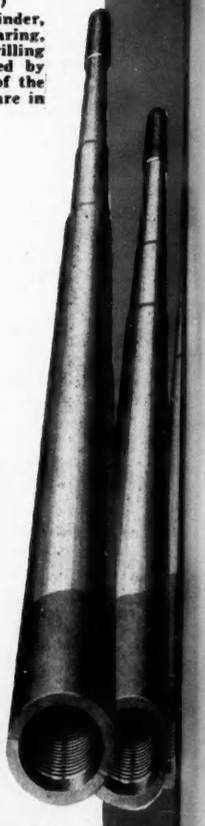
- **STEAM DRILLING ENGINE**
  (In stock at Corpus Christi)
  This 12" x 12" Twin Cylinder, Fully enclosed, Roller Bearing, Gumbo Buster Rotary Drilling Engine is widely recognized by practical operators as one of the finest engines built. Many are in use in Gulf Coast fields.



- **ROTARY BOILERS**
  (In stock at Corpus Christi)
  This 104 h. p. (A. P. I. rating), 300-lb. W. S. P. develops 132 h. p. yet the price is that of a 104 h. p. boiler. It is among the most widely used in Gulf Coast work.

- **MUD SCREENS** (In stock at Corpus Christi)
  Large capacity McNeely Vibrating Mud Screens for use on big Gulf Coast Rigs and Baroid Drilling Muds are carried in all Bridgeport Gulf Coast stores.

- **ROTARY TABLE**
  (In stock at Corpus Christi)
  The 26-inch Oil Bath, Roller Bearing Gumbo Buster Rotary is made entirely of steel—designed throughout to operate under the most severe drilling conditions encountered in deep drilling with minimum care and attention.



Illustrated here are only a few items in one of our Gulf Coast stores. We carry a complete line of Drilling and Production Equipment. Telephone for specific information on anything needed, in any locality.

NEW STORE AT HEBBRONVILLE

Stocks now on hand or in transit to Hebbronville consist of National Tube Pipe, American Drilling and Coring Lines, Cordage, Jensen Pumping Units, Jones Sucker Rods, Used Casing and Line Pipe, Drilling Muds, and the general line of drilling and production equipment used in the territory.

- **BRIDGEPORT DRILL COLLARS**
  No delay in obtaining the size and type of Bridgeport Drill Collars needed for Gulf Coast work. 6¼" O. D. and 8" sizes 30 feet long are carried in Corpus Christi stocks.

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ODESSA L. D. 632 Local 584 | TULSA L. D. 681 Local 5-3204 | OKLAHOMA CITY L. D. 785 Local 7-2726 | WICHITA L. D. 59 and 116 Local 2-1431 and 2-1432 | AND BRANCH [illegible]

MEN IN THE INDUSTRY'S NEWS

PAUL L. LYONS has been promoted to chief scout of Stanolind Oil Purchasing Company, recently formed as the crude oil buying unit of Standard Oil Company (Indiana). He has been assistant chief scout and will continue to have headquarters in Tulsa.

Lyons came to Tulsa in 1921 with Sinclair Crude Oil Purchasing Company. When this concern became the crude oil purchasing division of the Standard Oil Company (Indiana) in 1930, he was made assistant chief scout of Stanolind Crude Oil Purchasing Company.

FRANK BRUNER, who has been district superintendent in the Keokuk Falls field, Greater Seminole area, for Carter Oil Company, has been transferred to the Burbank fields as superintendent. He succeeds Ivan S. Salnikov, who is now chief engineer of the company.

GEORGE SCHNEIDER, chief geologist for The Texas Company in the Shreveport district, is convalescing at his home in Shreveport after being in a Shreveport hospital.

ROY L. BENOIT, attorney for Ohio Oil Company, Shreveport, is seriously ill in a Shreveport hospital.

GEORGE R. PINKLEY, geologist and South Texas representative for Fohs Oil Company, is closing the company's San Antonio office and moving it to Corpus Christi, effective August 1. The company has considerable acreage along the lower Gulf Coastal trend.

BOB MEBANE, geologist, is in charge of Salt Dome Oil Corporation and Gulf Board Corporation's newly created South Texas division, which has opened offices in the Nixon Building, Corpus Christi. These companies, jointly with Mills Bennett Production Corporation, recently acquired considerable outpost acreage and are attempting to extend that field two miles to the northeast.

CECIL LALICKER, Phillips Petroleum Company paleontologist in Corpus Christi, has resigned his position to accept an appointment at the University of Oklahoma in Norman. He will take over his new duties as assistant professor of geology on September 1.

DEAN W. R. WOOLRICH. head of the Engineering Departments at the University of Texas, addressed the Mid-Continent Section of the American Society of Mechanical Engineers at their regular meeting in Tulsa, Friday, July 22. Dean Woolrich was formerly Dean of Engineering at the University of Tennessee and one of the engineers prominent in connection with the Tennessee Valley Authority.

JOHN HORNBECK, with Transwestern Oil Company, San Antonio, is vacationing with his wife in West Texas.

W. W. McDONALD and family are vacationing in Nebraska and Kansas. He is district representative for Arkansas Fuel Oil Company, offices in San Antonio.

R. W. NORTON, discoverer of the deep gas production that preceded the oil development in the Rodessa field, has organized Texarkla Oil Corporation, chartered under the laws of Delaware with a capital stock of $50,000. Shreveport has been designated as headquarters, and permit is held to operate in Texas.

R. MURRAY JOHNSON, land man for Magnolia Petroleum Company, Dallas, is spending a portion of his vacation near a hospital at Rochester, Minn., awaiting recovery of his young son from an appendectomy. The boy was sticken while the family was en route by train for Canadian border points.

L. C. STEDMAN, scout for Pure Oil Company in East Texas, is recuperating at Versailles, Ky., from a serious illness. He was given a leave of absence by the company.

C. C. POPE, West Texas district land man for Sun Oil Company with headquarters at San Angelo, has been temporarily transferred to McAllen, Southwest Texas. The change was made because of the impaired health of his son requiring a lower altitude.

JULIUS FOHS, president of Fohs Oil Company, Houston, accompanied by Mrs. Fohs, has recently sailed to Europe for an extensive tour through Switzerland.

H. L. PATTON, well firefighter, who recently lost an arm and saw his brother and a crew member killed when combatting a wild well in Vermilion Bay, Louisiana, has been released from the hospital. Since then he has assembled a new crew and superintended controlling the wild well.

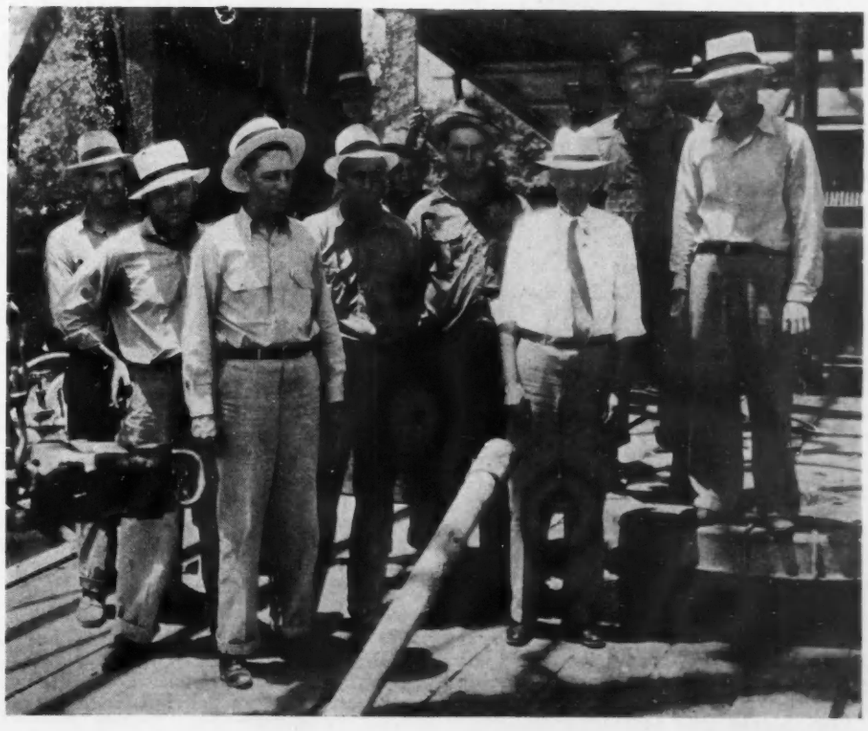
W. S. S. RODGERS, president of The Texas Company, New York, has been named to the board of directors of the National Association of Manufacturers.

FRANK PHILLIPS, president of Phillips Petroleum Company, while in Madison last week attending a federal court hearing, expressed a dislike for mortgages and made a third contribution to the Four Lakes Scout Council, in the amount of $5200, to help the Wisconsin group to erase its debt. He had previously donated $2000 on two different occasions. Of the latest grant, $2100 is to be used to increase the membership in the coun-

DISCOVER NEW NORTH LOUISIANA FIELD

These men were responsible for drilling operations on R. E. Allison's Ellerbe 1, Section 27-18n-14w, which opened a new basal Glen Rose producing field on July 15 that is just one mile north of Shreveport city limits in Caddo Parish, North Louisiana.

In the picture left to right are: A. G. McNaughton, driller; L. C. Bates, field superintendent; Emmett Heath, Gray Tool Company; Carl Griffith, truck driver; Travis Belew, member of crew; Floyd Burson, derrickman; R. E. Allison, Shreveport drilling contractor and owner of the well; Roy Walling, assistant field superintendent. In the rear is Sam Crouthers, truck helper.



cil, while the $3100 will be used to pay half the mortgage on Camp Tichora, at Green Lake, providing citizens in the five counties of the council give the other $3100 by April 1, 1939. If the entire $3100 is not raised by that date, Phillips will match dollar-for-dollar the funds raised locally.

CARL MAYER, independent operator of Corpus Christi, Texas, was a visitor in Houston last week.

C. W. NELSON, purchasing agent for Fohs Oil Company, Houston, is vacationing in New York.

ROGERT L. JONES, geologist for Cities Service Company at Tyler, Texas, has recently been transferred to Houston and put in charge of the Gulf Coast area. He succeeds Elton Rhine, who resigned to join Phillips Petroleum Company.

A. B. POWELL, of Clarksburg, and W. D. Gribble and A. R. Thomas, both of West Union, last week organized Empire Oil Company of West Union as a West Virginia development corporation. Capitalization was at $50,000.

DR. GUSTAV EGLOFF, director of research for Universal Oil Products Company, Chicago, has been awarded an honorary degree of doctor of science by the Polytechnic Institute of Brooklyn.

LOUIS C. SIMMEL, operator who came to the Illinois fields recently from California, has opened offices in the City National Bank Building in Centralia. He has completed several wells in the Centralia area, and has several more tests drilling.

EDWIN ROBERTSON, operator in the Centralia area of Illinois, was called to St. Louis last week by the death of his wife's mother, Mrs. William Bell.

CARL A. BENSON, who graduated in petroleum engineering at Ohio State University last June, is employed by Phillips Petroleum Company at Madison, Kansas.

GILBERT E. ARNOLD, graduate in petroleum engineering last June from Ohio State University, is with Birk City Oil Company at Owensboro, Kentucky.

EDWARD V. O'ROURKE, associate professor of petroleum engineering at Ohio State University, is working for Phillips Petroleum Company at Oklahoma City during the summer months.

WALTER HENSHAW, contractor and member of the firm of Henshaw Brothers, San Antonio, is in West Texas on business.

MONT CALVERT, scout for Humble Oil & Refining Company, San Antonio district, is vacationing in the Hill Country of Texas.

MRS. ALEDA BOWER, secretary at George McMurry Drilling Company, has returned to San Antonio after a trip to Boston, Niagara Falls, Chicago. She went by boat to New York.

W. L. EDDLEMAN, manager of Zingery Map Company, Corpus Christi division, announced the completion of a new county map covering leases, ownerships, development and subdivisions in McMullen County.

JOE MARTY, with the Arkansas Fuel Oil Company, San Antonio, is in Monterrey, Mexico.

WALTER DIMALINE, with Standard Oilfield Statistics, Inc., San Antonio, spent several days in Houston on business.

H. A. SACKMAN, Bartlesville, has been transferred by Phillips Petroleum Company to its new Midwestern production headquarters established last week in the Lumpkin Building, Mattoon, Illinois. He succeeds A. E. Black, who has worked out of Mattoon while representing the Phillips Company in Illinois during the past year, and who has been transferred to Wichita Falls, Texas.

H. M. B. INGLIS, consulting geologist, returned to Calgary, Alberta, last week after supervising initial operations at North Taber Royalties Ltd.'s wildcat test in the southern part of the Canadian province.

MISS MINETTE RIES, paleontologist with Phillips Petroleum Company, Corpus Christi, is vacationing in Mexico City.

F. E. HEATLEY, magnetometer operator, has returned to San Antonio after spending several weeks working prospects in New Mexico.

STARR POPE, zone agent for Gulf Oil Corporation on the lower Gulf Coast, and stationed at Corpus Christi, has been vacationing in the Rocky Mounty area. He has been visiting Yellowstone National Park, Salt Lake City and other points of interest.

DR. R. D. NIEDIG, Calgary, was elected president of Rich-Well Oil Company, Ltd., Alberta producing company, when shareholders held a special meeting in Calgary last week. He succeeds W. S. Henderson, Calgary, now a director of the company. Other officers elected are Frank Webster, Calgary, vice president, and M. M. O'Brien and F. L. Burnet, K. C., directors.

DON RYAN, scout at Wichita, Kansas, for Standard Oil Company of Indiana's crude oil purchasing division, has been transferred to Mattoon, Illinois. He will be succeeded by Pat M. Broach, formerly at Grand Bend, Kansas. Bill Ross, now at Tulsa, will take over Broach's duties at Great Bend.

CARUS S. ICENOGLE, Mattoon attorney and member of the Illinois state bar, has prepared a handbook on Illinois Oil & Gas Law.

F. S. REITZEL of Sun Oil Company, Philadelphia, has been appointed temporary chairman of the American Petroleum Institute's committee on uniform methods of oil accounting, succeeding the late A. M. Brereton of the Pure Oil Company. He will fill the office until election of a new committee chairman at the organization's nineteenth annual meeting in Chicago in November.

W. C. CLINE, vice president of Lupher Drilling Company, left the Illinois Basin last week for Houston, Texas. He was accompanied by Bob Baxter, tool-pusher for the company.

PAUL SCHLICHER has resigned his position with a Mattoon, Illinois, law firm to join the legal department of The Texas Company. For the past two years he has also served as an assistant state's attorney.

DIED:

CLYDE M. BECKER, consulting geologist of Chickasha, Oklahoma, died at his home July 19 following a protracted illness. Becker was an authority on the geology of southwestern Oklahoma as well as North Texas. His first geological work was in the mining industry, which he followed until the World War, in which he did engineering work. After the war he engaged in geological work in connection with oil. The Wichita mountains were his special study in Oklahoma. Becker was a native of Iowa, where he was born in 1882. His schooling was at Oklahoma Baptist University, Shawnee, where he was athletic coach as well as student. For a brief period in 1934 he was deputy conservation officer of the Oklahoma Corporation Commission. His funeral was held at Chickasha July 21.

JACK LEBUS, 31, member of a family that has been engaged in the manufacture of rotary equipment and tools in Texas for many years, died July 19 at Greenville, Texas, from injuries resulting from a fall from the sixth floor of a hotel building. He resided at Electra, and was visiting in the latter city, accompanied by his wife.

FRANK J. NEWTON, 45 general manager and an owner of the Smith-Newton Oil Company, died July 14 in a hospital at Buffalo, New York. He was one of the most prominent operators in the Bradford field, and was formerly with the Manufacturers Gas Company and the Union Natural Gas Company. Surviving are his widow, two sons, a daughter, his parents, and a brother.

DANIEL A. CASSIDY, 62, well known throughout north Pennsylvania oil fields and recently with Minard Run Oil Company, died in a Bradford hospital July 13 after an illness of six weeks. He made his home in Lewis Run. Surviving are two sons.

CARROLL WALLACE VEITCH, 59, operator in many United States fields and in Alberta, Canada, died July 15 at his home in Evansville, Indiana. For the past seven years he had operated in Kentucky fields, near Owensboro. He was a member of the Kentucky Oil Men's Association. Surviving are his wife, a daughter and two sisters.

CLINTON DUDLEY CAMPBELL, 52, executive in the export department of Socony-Vacuum Oil Company, died July 10 while on a vacation at the Crater Club, Essex, New York. He made his home in Plainfield, New Jersey, and spent much of his time abroad. Surviving are his wife, two sons, a daughter, and a brother.

BAILY V. EMERY, 44, secretary-treasurer of Dixie Oil & Gas Company, Tulsa, Oklahoma, died July 20 at Tulsa. He was formerly connected with Skelly Oil Company.

THE WEEK'S NEWS SUMMARIZED

Legal

A partial victory for the oil industry was gained last week when convictions of 10 oil company officials and one company were set aside and new trials granted to 15 officials and 3 firms that had been judged guilty of violating anti-trust laws by a Madison, Wisconsin, jury. The presiding judge, however, upheld the conviction of 5 officials and 12 companies. When the trial started last October there were 69 defendants.

With the inception of a suit against the major film companies, the Department of Justice appears embarked upon a campaign to eliminate domination of retail markets by producers, with indications that if successful the same kind of proceedings may be brought against the oil industry. The film divorce suit filed in New York would require companies engaged originally in production, which later went into the retail field, to divest themselves of theaters. Conversely, theater operators who went into production would be required to give up the latter activity.

Start of the third Madison oil industry investigation for trust violations was delayed until August 4. No reason was given.

Allowables

August demand for United States produced crude oil will be 3,348,100 barrels daily, according to the estimates of the Bureau of Mines. This is 40,000 barrels daily higher than the bureau's forecast for July, but is 274,500, or 7 percent, less than the actual daily output in August, 1937. The bureau sees a continuation of efforts to reduce top-heavy gasoline stocks during the month, and believes that more than 6,000,000 barrels will be withdrawn.

Further indications that it is desirable to keep production in line with demand came at the Texas regular monthly proration hearing last week, when operators urged vigorously that Sunday shutdowns be continued. Fear was expressed that difficulties would arise if the shutdowns were abandoned. The proration order of Texas for August was expected to be issued at once.

Meanwhile, the industry also was awaiting with interest the meeting of the Interstate Oil Compact Commission on July 29 and 30, at which time some important economic reports are expected to be presented. The reports will deal with likely market trends during the coming six months. Another matter of importance that may come up is whether Kansas will continue as a member. Governor Huxman of Kansas has been urging the state to withdraw, charging the state had not been dealt with fairly, but last week the Kansas Corporation Commission urged retention of its membership.

Markets

Despite a sharp increase in production during recent weeks, gasoline and crude oil stocks continued to decline last week. As a result both crude and refined prices remained unchanged during the period, which marked the second week in which the former upward curve of refined prices was checked.

Gasoline stocks tumbled 1,172,000 barrels from July 9 to July 16, but are still 8½ percent higher than a year ago. Since March 19, a total of 14,481,000 barrels of gasoline has been withdrawn from storage and is responsible for the strength shown by this commodity.

Crude stocks dropped 1,197,000 barrels to 290,467,000 barrels, or 5½ percent below the level of a year ago, and just a few million barrels above the 17-year low reached in January, 1937. This marked the 12th consecutive week in which crude has been withdrawn from storage.

Whether both gasoline and crude stocks were to continue to decline in the face of rising production was the important question as markets marked time for further developments. Discouraging was the growth of fuel oil stocks to a point 35 percent higher than a year ago.

Although crude markets were unchanged, there were several sore spots. At K-M-A more than 100 wells are without connections. The Goldsmith field of West Texas was in trouble, following reduction of purchases by 5000 barrels. The East Texas field was experiencing some distress selling. Unless the Texas Railroad Commission is able to cure these local conditions in its August proration order, the stability of the market may be menaced.

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In Legal Circles

Judge upsets much of jury's work in fining only 17 of 46 convicted in Madison trust suit . . . Movie divorce suit may mean similar oil action

Industry wins partial victory at Madison

The oil industry, subject of anti-trust prosecution by the federal government, won a partial victory July 19 when Federal Judge Patrick T. Stone at Madison, Wisconsin, set aside convictions of 10 oil company officials and one company and granted a new trial to 15 officials and three firms.

However, conviction of five officials and 12 companies, remaining of 30 individuals and 16 companies found guilty by a jury in January after a 4-month trial, was upheld. Fines of $1000 each were levied on the officials, while maximum fines of $5000 each were assessed against the companies. No jail sentences were imposed. An appeal will be taken immediately to the United States district court of appeals at Chicago on behalf of those fined, announced William J. Donovan, New York, chief of defense counsel.

Terminates First Trial

Last week's hearing terminated the district court trial of what is commonly referred to as the "first Madison case." The charges involved buying activities of major companies serving 10 mid-western states in the East Texas and Mid-Continent fields. The period followed invalidation of the National Recovery Act until the time of the indictment, late in 1936. To a second indictment charging conspiracy to fix jobber margins, 13 companies and 11 individuals last month pleaded *nolo contendere* and were fined $15,000 each. Other companies and officials covered by the second indictment remain to be tried, with trial date tentatively set for late September.

Judge Stone's ruling, which followed six months study of the jury's verdict, was on a defense motion to set aside the verdict. In his 16-page decision, he classified the convicted defendants in three groups: Those in the first group he held were shown to have entered into an agreement to fix the mid-western tank car market by spot purchases; those in the second group were linked to the conspiracy by circumstantial evidence and their connection was subject to doubt, and those in the third group were shown by evidence to be innocent.

The five individuals and 10 companies fined last week were but a small fraction of the 69 defendants called to trial last October 4. Seven companies and 16 individuals were freed during the course of the trial on motions of the government, after presentation of the prosecution's case revealed insufficient evidence, or on motion of defense counsel before the case was given to the jury. Charges against three trade journals were similarly dismissed.

The court, while upsetting much of its work, commended the jury: "That the jury was in a position to make the complete and critical study of the proof as it applied to each defendant separately is at least doubtful," Judge Stone said. "It has taken the court a considerable time to do it with the aid of the record and briefs. The jury, acting in an effort to do justice, did get the larger view of the case and is to be commended for its handling of a most difficult problem." The jury was kept in the custody of the marshal during the four-month trial, with the mail and reading material of jurors censored and only frequent visits with relatives, and only in the presence of a court officer, permitted.

It would have been unjust and unfair to the jury if they were to have been kept sequestered while motions on behalf of each defendant were considered, Judge Stone said, explaining why he did not rule on the motions to dismiss before the case went to the jury.

"The charge against the defendants lay in a field of economic controversy," he said. "Violation of the anti-trust laws are different from crimes which are *mala in se*. The department of justice has in each case the choice of a civil or criminal proceeding. It recognizes that the rule of reason, long considered essential in administration of the Sherman anti-trust act, makes sharply defined standards impossible. In view of these circumstances, I concluded to let the case go to the jury as to all defendants and after a verdict to exercise, if necessary, the discretion of the court to prevent any miscarriage of justice.

"Many of the acts were innocent enough on their face, so that a defendant, knowing only what appeared on the surface, might easily have drawn

Charges Dismissed

ONE COMPANY:

Globe Oil & Refining Company of Kansas.

TEN INDIVIDUALS:

Henry M. Dawes, Chicago, president, The Pure Oil Company.

Jacob France, Baltimore, president, Mid-Continent Petroleum Corporation.

Dan Moran, Ponca City, president, Continental Oil Company.

Frank Phillips, Bartlesville, president, Phillips Petroleum Company.

Edward G. Seubert, Chicago, president, Standard Oil Company of Indiana.

W. G. Skelly, Tulsa, president, Skelly Oil Company.

Allan Jackson, Chicago, vice president in charge of sales, Standard Oil Company of Indiana.

Charles L. Jones, New York, vice president in charge of domestic trade department, Socony-Vacuum Oil Company.

Arthur V. Bourque, Tulsa, secretary and treasurer of Western Petroleum Refiners' Association.

Byran S. Reid, Chicago, general manager of Chicago Division, Socony-Vacuum Oil Company.

Granted New Trials

THREE COMPANIES:

Standard Oil Company of Indiana
Cities Service Company.
Barnsdall Refining Company.

FIFTEEN INDIVIDUALS:

Alexander Fraser, St. Louis, president, Shell Petroleum Corporation.

E. B. Reeser, Tulsa, president, Barnsdall Refining Company.

E. A. O'Shaughnessy, Minneapolis, president of three Globe Oil & Refining companies.

Edward L. Shea, New York, president, Tide Water Associated Oil Company.

A. G. McGuire, Milwaukee, chairman of board, Wadhams Oil Company.

H. E. Bradli, New York, vice president and general manager, Cities Service Export Oil Company.

Edward J. Bullock, Chicago, vice president in charge of purchasing for Standard Oil Company of Indiana.

J. W. Carnes, New York, vice president, Sinclair Refining Company.

Harry D. Fruehauff, Tulsa, vice president, Cities Service Export Oil Company.

Harry J. Kennedy, Ponca City, vice president in charge of marketing, Continental Oil Company.

Noel Robinson, New York, vice president, Tide Water Associated Oil Company.

C. B. Watson, Chicago, vice president, The Pure Oil Company.

A. M. Hughes, Bartlesville, sales manager, Phillips Petroleum Company.

J. W. Warner, Tulsa, Tide Water Associated Oil Company.

O. J. Tuttle, Tulsa, tank car sales manager, Empire Oil & Refining Company.

Convicted and Fined

TWELVE COMPANIES ($5000 fine, each):

Socony-Vacuum Oil Company, Inc.
Continental Oil Company.
Shell Petroleum Corporation.
Sinclair Refining Company.
The Pure Oil Company.
Mid-Continent Petroleum Corporation.
Phillips Petroleum Company.
Skelly Oil Company.
Globe Oil & Refining Company of Oklahoma.
Globe Oil & Refining Company of Illinois.
Empire Oil & Refining Company.
Wadhams Oil Company.

FIVE INDIVIDUALS ($1000 fine, each):

Charles E. Arnott, New York, vice president, Socony-Vacuum Oil Company.

H. T. Ashton, St. Louis, manager of Lubrite Division, Socony-Vacuum Oil Company.

P. E. Lakin, St. Louis, general sales manager, Shell Petroleum Corporation.

Robert W. McDowell, Tulsa, vice president, Mid-Continent Petroleum Corporation.

R. H. McElroy, Jr., Chicago, tank car sales manager, The Pure Oil Company.

no inference of violation of law. The whole activity of a large part of a great industry of the country was involved. Large corporations with national distribution of gasoline were committed to a course or policy by agents or officials in charge of one department, where it is not at all clear that the responsible executive in charge of the entire company ever had any knowledge that a small portion of the purchases here complained of had been made as a result of this conspiracy. Circumstantial evidence was adduced which applied with great force as to some defendants, yet had no probative force as to the others."

Judge Stone reviewed at length evidence presented by the government to support its charge that a conspiracy was entered into which allegedly fixed artificially high prices on gasoline in the "Standard of Indian territory" during 1935 and 1936 through operation of buying programs, and, with respect to those whose convictions were sustained, concluded: "I am satisfied that there was ample evidence to sustain the contention of the government that the defendants did have the power to control the market and that they did so as charged."

The court said he found "no substantial evidence in the record fairly tending to sustain the verdict of the jury" in the case of defendants dismissed. With respect to those granted a new trial, he declared: "There is good reason to believe that certain defendants have not had an adequate separate consideration of their defense in view of the fact that as to some of them direct evidence of participation was lacking or slight."

Third Madison trust investigation delayed

Start of a projected third "oil conspiracy" grand jury investigation at Madison, Wisconsin, was delayed last week until August 4. After sitting since July 12, the jury, which was to launch a new inquiry into the oil industry last week, returned a partial report covering 47 indictments on "routine cases" to District Judge Patrick T. Stone and on July 20 was excused until August 3.

United States Attorney John J. Boyle said he would have one or two criminal cases to present to the jury when it reconvenes, delaying the oil inquiry another day. No reason for postponement of the oil investigation was given by federal officials.

Movie divorce suit seen as forerunner of others

Government efforts to break up producer-retailer control of the oil industry, alleged to be held by a group of major companies, was seen in Washington last week as dependent upon the success of a similar suit instituted in the New York District Court July 20 by the the Department of Justice against the major motion picture companies.

In that suit, a proceeding in equity, the government seeks to have the integration of production and retailing branches of the motion picture industry declared unlawful as an instrumentality of monopoly and restraint upon interstate trade and commerce, and violation of the Sherman Anti-Trust Act.

Specifically asked is a decision requiring motion picture producers and distributors to divest themselves of their retail outlets (theatres), and requiring exhibitors who have engaged in production and distribution activities to divest themselves of such facilities.

The oil and motion picture industries have for years been productive of more complaints to the Department of Justice than any other trades, and the department has constantly kept in close touch with developments in those lines. The motion picture suit, accordingly, is viewed as embodying the department's ideas as to how the controversial problems of the oil industry can best be solved.

That the department is determined to go through with its divorce proceedings is indicated by its announcement, upon inception of the suit, that if the case fails, the results of its investigation and of the trial will be laid before Congress with a request for amendment of the anti-trust statutes.

Results of integration in the motion picture industry, which department officials are represented as believing holds true also in the oil industry, were set forth in an explanatory statement issued by Assistant Attorney General Arnold as including the driving out of business of independent retailers (exhibitors); the inability of new competitors to enter the field because of the difficulty of securing product on any reasonable and non-discriminatory basis; operation by independent retailers who have managed to survive, only under terms which leave them little freedom in the selection of product and in the management of their business; the impossibility of independent producers to secure a satisfactory market for their product; and the discouragement of new capital investment because of the great difficulty of competing on a fair basis with the major companies. That the film suit is seen by the department as throwing light on the application of the anti-trust laws to other industries was disclosed by Arnold in his statement, in which he said: "In addition to the benefit to this particular industry and its patrons, the present suit may settle questions that are vital in the application of the anti-trust laws to other industries in which manufacturers or producers, knit together through a common trade association, seek directly or indirectly to dominate and control markets.

"Until the evidence is produced, it is too early to state whether the anti-trust laws by themselves are sufficiently effective to restore competitive conditions. If it appears from such evidence that further aid is needed, the results of the investigation and trial will be brought to the attention of Congress.

"The application of the general principles of the anti-trust laws to particular industries demands distinction which cannot be drawn in advance of the production of actual proof. They can only be staked out with respect to particular industries through the clarifying process of judicial action. This is the purpose of this suit."

The department, Arnold concluded, "desires to encourage and not to retard" the development and orderly operation of industry. "It must act through litigation because it has no power to speak authoritatively or finally on any issue except through institution of judicial proceedings," he explained. "However, though the form of its action be adversary, its substance permits and the policy of the department encourages the fullest cooperation with industry."

Interstate Compact

Committee reports on future economic trends, and question of Kansas continuing its membership are to be feature of meeting of commission this week.

Compact Commission meets July 29 and 30

The next meeting of the Interstate Oil Compact Commission is to be held at the Broadmoor Hotel at Colorado Springs on July 29 and 30.

Economic Trend Reports

The most important feature of the meeting will be the report of a committee consisting of Alexander Sachs, E. de Golyer and Joe Pogue, oil technicians and economists who were named at the last meeting to form a nucleus of a committee of five. This committee is to report at each quarterly meeting of the commission and give its views on trends of the oil market for the succeeding six months. It is probable that some official from the Bureau of Mines will be added to this committee, as well as a fifth member who is familiar with the law governing oil production throughout the United States.

At the last meeting each of those members now named on the committee gave a report on various phases of the oil industry, each of them indicating that they believed the industry did not look ahead far enough and that this was the cause of much of the maladjustment in the attempt to balance supply with demand.

The Bureau of Mines now predicts

for only one month in advance and this prediction is not available until about two weeks prior to the period covered.

The committee has indicated that it will have ready for the meeting this week its first report which may have an important bearing on future trends of allowables fixed by regulatory bodies which are members of the Interstate Compact Commission. The views of Dr. Joseph E. Pogue, petroleum economist for Chase National Bank, were expressed at the last meeting.

Kansas Situation

Another subject which will be of interest to observers at the meeting will be the attitude of Kansas, and especially the attitude of its governor, Walter Huxman, who has complained that the Compact Commission failed to retain for Kansas its share of the nation's oil market. Huxman has pointed out that Kansas' potentials have risen from 300,000 barrels daily to 3,000,000 barrels daily during the past few years and that the market outlet for Kansas crude has not risen proportionately, in fact has declined since Illinois came in, especially.

He seems to feel that the Compact Commission should have the duty of distributing markets and in effect to require purchasers to buy crude in those fields designated by some governmental agency which would have the power to require companies to install pipe lines to all fields in sufficient numbers and of sufficient size to take to market the oil which the government thinks should be withdrawn from a given area. Huxman is perfectly willing to have the Federal Government do this if the Compact Commission does not.

Alexander Sachs explained that Federal control would fail to accomplish the purpose which Huxman had in mind. Because of his wide experience as a member of the Petroleum Administration Board during N.R.A. days, Sachs' views were regarded by most observers as the best informed thought on the question.

Kansas commissioners favor compact membership

It is the attitude of the Kansas Corporation Commission that the state keep its membership in the Interstate Oil Compact Commission and that the compact be amended to give it some authority by which the member states can determine and allocate the market demand among themselves. Such was the content of a letter written July 20 by E. E. Blincoe, commission chairman, to Governor Walter A. Huxman, who the week previous wrote the commission a letter asking its attitude toward withdrawal from the compact.

Any change in authority to compacting states would come from changes in the federal statute through action by congress.

The attitude of the Kansas commission may be presented to the compact at its next quarterly meeting in Colorado Springs, July 29 and 30.

Allowable Picture

Bureau of Mines foresees 40,000 barrels per day increase in demand during August . . . Operators in Texas favor continuation of Sunday shutdowns.

Bureau's forecast still below level of year ago.

Foreseeing continued efforts to reduce top-heavy gasoline stocks, the Bureau of Mines on July 19 forecast that August demand for domestic crude oil will be 3,438,100 barrels a day, 40,000 barrels higher than the estimate for July; but 274,500 barrels, or 7 percent, less than the actual daily output for August, 1937, and 6 percent less than the demand for domestic crude in that month.

Daily average crude-oil production and runs to stills during the four weeks from June 4 to July 2 averaged 3,115,000 and 3,110,000 barrels, respectively, the bureau pointed out, and during that period refinable and heavy stocks of crude declined 6,911,000 barrels. Foreign stocks, however, increased 25,000 barrels, making a total decline of 6,936,000 barrels for domestic grades, and the addition of this amount to production gives 3,363,000 barrels as the apparent daily average demand for domestic crude during the period, compared with 3,333,300 barrels estimated by the bureau for the month of June.

Domestic motor-fuel demand for the coming month is placed by the bureau at 50,000,000 barrels, almost 1 percent higher than the actual demand in August, 1937. Exports have been estimated at 4,500,000 barrels, 500,000 barrels above the July estimate and 729,000 barrels higher than the actual exports for the month last year.

"Stocks of finished and unfinished gasoline," the report commented, "amounted to 88,147,000 barrels on May 31. According to statistics of the American Petroleum Institute, these stocks declined 6,963,000 barrels during June, bringing them to approximately 81,200,000 barrels as of June 30. The bureau estimates that finished gasoline stocks will decline 6,300,000 barrels during August. If both the July and August bureau estimates of gasoline stock decrease materialize, stocks of gasoline will be approximately 68,300,000 barrels on August 31, still 1,500,000 barrels higher than they were on August 31, 1937."

Benzol and direct sales and losses of natural gasoline have been estimated as 1,000,000 barrels, making the estimated refinery production of gasoline 47,200,000 barrels, recommended for distribution among the various districts as follows: East Coast, 6,560,000 barrels; Appalachian, 1,630,000 barrels; Indiana-Illinois, 8,310,000 barrels; Oklahoma, 2,650,000 barrels; Kansas-Missouri, 2,560,000 barrels; inland Texas, 3,780,000 barrels; Texas Gulf Coast, 11,920,000 barrels; Louisiana Gulf Coast, 1,500,000 barrels; North Louisiana-Arkansas, 980,000 barrels; Rocky Mountain, 1,160,000 barrels; California, 6,160,000 barrels.

Natural gasoline consumption at refineries in August is figured at 7.2 percent of the total gasoline production, which amounts to 3,400,000 barrels. The yield of straight-run and cracked gasoline is estimated at 44.2 percent, compared with 44 percent estimated for July and an actual of 43.18 percent for August, 1937. The application of the current yield to the estimated straight-run and cracked gasoline production of 43,800,000 barrels gives refinery crude-

Bureau of Mines Estimated Daily Average Crude Oil Demand by States

(As no changes in crude-oil stocks are involved in these estimates, they represent demand rather than production)

STATE	Forecast August, 1938	Forecast July, 1938	Actual Production May, 1938
Texas	1,377,800	1,360,300	1,216,500
California	649,300	642,300	688,600
Oklahoma	529,700	518,400	464,100
Louisiana	256,100	260,600	256,600
Kansas	169,300	172,300	153,500
New Mexico	112,300	112,900	93,200
Wyoming	62,200	55,500	48,700
Michigan	60,000	56,400	55,200
Arkansas	53,900	51,000	41,200
Pennsylvania	50,100	52,800	49,000
Illinois	45,800	45,500	46,400
New York	15,500	15,000	14,400
Kentucky	14,500	14,500	14,300
Montana	13,900	13,500	14,200
Ohio	10,000	9,700	9,100
West Virginia	9,900	10,000	10,400
Colorado	5,500	5,200	4,600
Indiana	2,300	2,200	2,500
	3,438,100	3,398,100	3,183,000

oil requirements as 99,080,000 barrels, or 3,196,100 barrels daily.

Foreign crude runs to stills are estimated at 2,500,000 barrels, 100,000 barrels more than the July estimate, and the figure for crude-oil exports has been increased 600,000 barrels over the July estimate to 7,700,000 barrels, while the estimate for fuel and losses has been lowered 200,000 barrels to 2,300,000 barrels.

The breakdown of the total estimated daily demand for domestic crude of 3,438,100 barrels gives market demand by states of origin as shown in the accompanying table. However, it is pointed out by the bureau, as demand may be supplied either from stocks or from new production, contemplated withdrawals from crude-oil stocks must be deducted from the bureau's estimate of demand to determine the amount of new crude to be produced.

Operators want Texas Sunday shutdowns

Operators urged vigorously that the Sunday shutdowns be continued throughout August at the monthly Texas proration hearing held in Austin last week.

Six days of shutdown in August was urged by R. H. Foster of Landreth Production Company. He reminded the commission that there are only four Sundays in this month and that this would mean a higher daily average allowable than was in effect for the month of July when there were five Sundays.

Charles F. Roeser urged the commission to maintain the Sunday shutdown through the remainder of this year and well into next spring. He pointed out that there were prospects of balancing supply and demand if the status quo is maintained, but he feared that difficulties would arise if the shutdown is abandoned.

K-M-A Situation Bad

Indicative of the trend of conditions, and seriously considered by the commission, was the report from the K-M-A field that 110 wells were without connections, despite the fact that operators had agreed to allowable cuts reducing the per well allowance from 58 to 35 barrels daily per well.

Ed Irwin, representing North Texas Oil and Gas Association, told the commission that unless some program is worked out in the near future, he feared distress oil, and possibly hot oil, might begin to filter into the market which would have a serious effect on the entire price structure.

There are now five pipe line companies taking oil from the K-M-A field, one of which is filled to capacity and the others have indicated that they have no desire to increase their takings from the field.

Irwin offered no solution to the problem unless the commission took a hand. Testimony developed that some purchasers were taking more crude than they had agreed to buy, despite the fact that operators had agreed some time ago that total field outlet need not exceed nominations of purchasers.

Commissioner Ernest Thompson suggested as a solution that the commission reduce the total Texas allowable in an effort to firm up the demand. He pointed out that the situation which existed in K-M-A has developed in fields in other states and expressed the opinion that it indicated production in excess of market demand.

The Goldsmith field was likewise faced with difficulties, as the Gulf has reduced its takings 5000 barrels daily which represents about 25 percent of the total current allowable for the field. Ed Landreth requested the commission to reduce allowables in other parts of the state so that the Gulf, which complains its storage is full and it is taking supply from other fields, might be able to take more oil from Goldsmith. Conditions in other sections of the state seemed to be relatively stable and no other requests for increases in allowables were received.

The Bureau of Mines recommended that Texas produce during August 1,377,800 barrels daily which was an increase of 17,500 barrels over the July recommendation. The commission reported that the allowable was 1,333,207 barrels daily average for the first 18 days of July. This included three Sunday shutdowns.

Nominations by purchasers totaled 1,591,212 barrels daily for the month of August which was an increase of 27,614 barrels over the month of July as indicated by the attached table.

Natural Gasoline to Gain

A material increase in natural gasoline must also be taken into consideration in determining the total volume of crude necessary for processing.

There were 2962 gas wells reported as producing during May, 1938, and 40,843 oil wells were reported as producing gas to gasoline plants.

The combined gas production of the oil wells and gas wells amounted to 2,873,039 m.c.f. daily. Gasoline plants processed an average of 2,191,077 m.c.f. daily, and recovered 2,329,924 gallons of gasoline daily during the month.

This volume of natural gasoline is equivalent to 126,078 barrels of crude oil daily, on a basis of 44 percent gasoline recovery.

Butane-propane production was 203,519 gallons daily during May, as compared with 230,584 gallons daily during April. May carbon black production amounted to 1,010,289 pounds daily.

East Texas Increases

An increase of 4.61 pounds in the bottom-hole pressure of the East Texas field during the month ending July 8 was reported by the commission. This leaves an average of 1125.45 pounds bottom-hole pressure as of the latter date. During the interval the average daily allowable was 391,783 barrels which indicated that the pressure rose at the rate of .392 pounds per million barrels of allowable oil.

Kansas regulation study to be heard July 25

Changes in proration regulations for Kansas will come before the State Corporation Commission July 25 in recommendations of a committee of 9, who will work with Dr. Eugene S. Stephenson, University of Kansas, Lawrence. This was the progress of the general hearing at Wichita July 15, when the commission heard suggestions from oil producers. The committee of 9 will have 5 members from the Kansas Independent Oil & Gas Association and 4 from the ranks of major oil companies.

One of the suggestions of July 15 was that potentials be taken on 8-hour flow periods rather than 2 4-hour periods. Abandonment of the decline curve in determining potential rating also was suggested.

Reinstate Oklahoma City underproduction

Underproduction for the Wilcox zone of the Oklahoma City field was reinstated by the Oklahoma Corporation Commission July 16 and producers were given until September 1 to make up these back allowables. By that date all remaining underproduction, except current, will be wiped off the corporation records.

The order is retroactive to January 1, 1937 on one-well leases, which are estimated to have 200,000 barrels of underproduction. For leases of more than one well the order is retroactive to August 1, 1937. The estimate of oil recoverable on these leases during the period in which it can be produced is 350,000 barrels.

The order fixed no details as to daily output in making up this underproduction nor did it specify methods.

The hearing to determine August allowables for Oklahoma oil fields will be held July 27 in Oklahoma City.

Nominations for Texas Crude Oil for Six Months Period

DISTRICT	1938 August	1938 September	1938 October	1938 November	1938 December	1939 January
1 Southwest Texas	27,593	27,595	27,593	27,597	27,594	27,592
2 Southwest Texas	78,097	78,501	78,805	78,955	79,059	79,163
3 Gulf Coast	277,459	275,559	276,459	276,709	276,709	276,709
4 Southwest Texas	225,520	228,720	228,870	229,020	229,120	229,220
5 East Central Texas	61,275	68,355	65,375	66,660	66,555	66,530
6 East Texas Outside of East Texas Field	66,129	60,129	60,129	60,129	60,129	60,129
6 East Texas Field	431,306	424,504	420,228	420,228	419,728	419,728
7 West Central Texas	39,312	39,392	39,422	39,572	39,572	39,572
7C West Central Texas	35,925	35,505	35,505	35,505	35,505	35,505
8 West Texas	223,041	222,412	222,362	222,262	222,162	222,162
9 North Texas	61,557	61,557	61,507	61,507	61,457	61,432
10 Panhandle	63,998	63,998	63,998	63,998	63,998	63,998
Total all Districts	1,591,212	1,586,227	1,580,253	1,582,142	1,581,588	1,581,740

Net increase all Districts, August over July—27,614 Barrels.

World Situation

Shell's annual stockholders report reviews 1937 and studies 1938 prospects of leading countries . . . Company produced 11 percent of world's oil

U. S. output curb seen as necessity

"The outlook for 1938 in the United States can only be described as uncertain and must remain so until such time as general business conditions improve and crude oil production is again in line with consumptive demand," Viscount Bearsted recently told stockholders of Shell Transport & Trading Company, Ltd., at the annual meeting in London.

Lord Bearsted's organization, which is interested in crude oil production and marketing of refined products in most of the major producing and consuming nations of the world, in 1937 produced 31,986,607 metric tons out of the world's total of 280,940,560 metric tons, giving the Royal Dutch Shell Group better than 11.3 percent of the total oil recovered. This means that one out of every nine barrels of oil produced from the earth belongs to the group.

In spite of the industry as a whole having shown an overall improvement in 1937 in the United States, Lord Bearsted regarded the level of profit for that year as disappointing, due to the tendency of state regulatory bodies to anticipate a larger demand in fixing allowables than actually materialized, and the consequent increase in stocks.

Mexican Situation

Going into the situation in Mexico, where Shell Transport & Trading Company is interested in Compania Mexicana de Petroleo, El Aguila, S. A., which last year produced 4,193,916 metric tons out of Mexico's total production of 6,751,000 metric tons, Lord Bearsted said, "Any kind of satisfactory co-operation between the Mexican government and the oil companies can only be attained if there is present on the Mexican side a desire to co-operate in the protection of the oil industry, its workers, and the capital which has been legitimately invested in it to the great advantage of the country.

"The Aguila company—as, indeed, I believe, all the other companies involved—are ready and anxious to continue their operations in Mexico."

Exploring in Venezuela

Conditions between the Venezuelan government and Shell interests there were characterized by Lord Bearsted as happy, and "between the companies and labor there is an understanding which I hope will continue throughout the years to the mutual benefit of all concerned." Venezuelan production in 1937 was rated at 27,723,000 metric tons, of which 10,280,903 tons were recovered from wells of three Shell organizations: Caribbean Petroleum Company, Venezuelan Oil Concessions, Ltd., and Colon Oil Corporation.

In speaking of the future of the company in Venezuela, Lord Bearsted said, "Our exploration program continues to be large. As a result of careful geological selection the group has recently acquired an area of approximately 600,000 hectares (a hectare equals 2.47 acres) in various parts of Venezuela.

"A new company has been formed to hold these concessions, called the Venezuelan Oil Development Company, Ltd., the shares of which will be held in equal proportions by our group, Venezuelan Oil Concessions, Ltd., and Canadian Eagle Oil Company. Geological examination is continuing, but much work and testing will need to be carried out before we can speak with assurance as to the new company's prospects."

Exploratory efforts of Anglo-Egyptian Oilfields, Ltd., a Shell controlled organization in Egypt, a country in the throes of an intense wildcatting campaign by leading oil companies of the world, were rewarded by discovery of a field at Ras Gharib, the chairman told the stockholders, and added that it was yet too early to gauge the extent of the discovery.

Growing importance of the market

Pipe Line News

Another RFC loan to be sought to lay natural gas line into Minnesota . . . This time from Wyoming

Ask $50 million loan for Wyoming-Minnesota gas line

Closely following announcement a week ago that a $20,000,000 Reconstruction Finance Corporation loan would be sought for construction of a natural gas pipe line from Southwestern Kansas fields to the Mesaba iron range in Northern Minnesota, John W. Schmidt, of Anoka, Minnesota, president of Public Service Gas Company of Minneapolis and Great Falls, Montana, announced that application for a $50,000,000 R. F. C. loan for construction of a line from Wyoming and Montana to Minnesota and Wisconsin had been made.

Northern Natural Gas Company at present has a line running from southwestern Kansas to St. Paul, where it serves a number of industrial plants. Domestic service, however, is not furnished the Twin Cities.

Construction of either of the proposed lines would furnish the first major natural gas line project since 1930.

Enlarge Vandalia Illinois line

Construction of an 8-inch loop to its 6-inch line from Vandalia, Fayette County, Illinois, to a booster station 12 miles south in Marion County was announced last week by Illinois Pipe Line Company as a further aid to movement of crude from pools in the booming Clinton-Marion-Fayette County area.

The Texas Company has announced a 4-inch line from its recently opened Raccoon Township field, Marion County, to run about 12 miles northwest to Sandoval, where it will connect with the Illinois Pipe Line Company's line.

Ask dismissal of pipe line assessment appeal

The pipe line department of Standard Oil Company of Louisiana last week asked dismissal of its appeal from an order of the Arkansas Corporation Commission fixing its 1937 property assessment at $1,954,000 in Third Division Circuit Court at Little Rock.

Commission officials said that an agreement had been reached under which the state would waive collection of penalties for delinquency in payment of the taxes, due last April, and the company would pay its taxes on the assessment set by the commission. The company's properties are in several southern Arkansas counties.

Illinois towns seek to tap Panhandle line

Panhandle Eastern Pipeline Company's line running east and west through Central Douglas County, Illinois, would furnish natural gas to three towns, Arthur, Atwood and Newman, if applications for WPA grants and loans for construction of municipal gas distribution plants are approved by federal officials. Cost of each plant would be between $45,000 and $60,000.

Reopen De Queen station

Standard Pipe Line Company's pumping plant at De Queen, Arkansas, closed since last October, was reopened last week. The station is a unit in the transportation of crude oil from Oklahoma fields to refineries in Louisiana. It was constructed in 1910.

afforded the oil industry by the agricultural industry and the growing interdependence of the two industries was stressed by Lord Bearsted. He cited particularly the increasing markets for grass and hop driers, cattle and fruit tree sprays, the Diesel engine for mechanical milking power, and kerosene for chicken brooders and incubators, in addition to petroleum requirements of mechanized farming that have been in use for years.

Likewise the chairman cited the tendency in some parts of the world for governments to use surplus balances to encourage road transport by remission of duty, specifically mentioning the Union of South Africa, which made it possible for motorists there to buy gasoline six pence per gallon cheaper than previously, and Rhodesia, where motorists also benefited from a similar policy. Indo-China, Jamaica and Turkey were also mentioned.

World production of all important producing nations in 1937, together with that of the Royal Dutch Shell Group in most of those countries, is shown in the following table:

COUNTRY	METRIC TONS	
	Total Production	Production of Royal Dutch Shell Group
United States	173,734,000	7,992,211
Russia	28,397,000	.....
Venezuela	27,723,000	10,280,903
Roumania	7,147,000	1,682,447
Iran	10,330,000	.....
Netherlands E. Indies	7,189,000	5,095,986
Mexico	6,751,000	4,193,916
Colombia	2,904,000	.....
Argentina	2,282,000	555,686
Peru	2,319,000	.....
Trinidad	2,253,000	246,371
British India and Burma	1,435,000	.....
Iraq	4,314,000	972,182
British Borneo	792,850	.....
Poland	501,000	.....
Germany	486,000	4,345
Egypt	169,710	169,710
Japan including Taiwan	368,000	.....
Ecuador	280,000	.....
Sarawak	.....	216,871
Canada	366,000	.....
France	72,000	.....
Brunei	.....	575,979
Bahrein	1,061,000	.....
Other Countries	66,000	.....
Total (Metric Tons)	280,940,560	31,986,607

From the foregoing table it will be observed that Shell Transport & Trading Company had no production in 1937 in Russia, Iran, Colombia, Peru, Burma, British Borneo, Poland, Japan, Ecuador, Canada, France and Bahrein. Of the foregoing, Japan and Russia have petroleum laws excluding foreigners. And it was only last year that Iran granted a concession to any but Anglo-Iranian Oil Company. While Colombia is not listed as one of Shell's producing countries, the organization holds considerable land in petroleum concessions there through Shell de Colombia. With reference to France and Poland, the trend of production in both those nations has been downward for years.

As to the financial condition of the company, assets are worth upwards of £53,000,000 (English pounds sterling), while the creditors account amounts to only £204,000, or $265,000,000 to $1,020,000. In addition to producing, refining and marketing properties, at the end of 1937 the company had at its disposal a tanker fleet of 2,200,000 tons loading capacity and was expecting delivery during 1938 on 22 more tankers.

Market Situation

Markets remain unchanged . . . Both gasoline and crude stocks continue sharp decline, despite gain in crude production and in runs to refinery stills

Markets maintained as stocks decline

The petroleum industry's market situation generally is considered fair, as continuance of gasoline and crude stocks declines in the face of sharply rising crude production enabled prices to be maintained. However, the need for keeping the output of wells in line with consumption was further demonstrated during the week, when fuel and gas oil stocks registered another sizeable increase.

As refined prices remained practically unchanged last week, it marked the second consecutive week in which the upward trend was interrupted. Although demand remains fairly brisk, as shown by the decline in gasoline in the face of higher crude runs to stills, it is not as high as during the July 4 holiday period. Consequently spot sales have been relatively slow.

Some Distress Crude

Crude prices remained unchanged, although there are several weak spots Particularly significance is attached to the situation in the K-M-A field of North Texas, where more than 100 welis do not have pipe line connections. While producers have made a few price concessions in the form of transportation charges, the schedules at the wells have been maintained. The Goldsmith field of West Texas also is experiencing difficulties, since one major purchaser reduced the volume it was buying by 5000 barrels and other concerns have not taken up the slack.

It developed last week that the higher crude allowables permitted during July were not doing serious damage to the market situation. Although crude production has risen nearly 300,000 barrels daily since the first of July, gasoline stocks declined 1,172,000 barrels during the week ending July 16. This was achieved although crude runs to stills rose 100,000 barrels to 3,195,000 barrels daily. However, the latter was responsible for a growth in fuel and gas oil stocks, which now total 142,068,000 barrels, or 35 percent more than a year ago.

The fuel oil situation is the most unhealthy angle of the industry's market situation. Stocks are getting so large it appears crude runs to stills will of necessity be checked drastically next winter. Unless crude runs are retarded gasoline stocks, still ahead of last year, will menace the stability of the market.

Fuel Stocks Gain

Until it is known what course the leading producing states are going to take in respect to allowables for August, it appears the market will mark time. It is anticipated that August allowables will be somewhat higher than those used in July. However, no immediate serious damage may result unless production is permitted to climb too sharply. On the other hand any increase in production will reduce withdrawals from storage somewhat, and thereby cause the industry to enter winter months in a less favorable statistical position.

Industry's inventory position still good

Despite rapidly increasing production from wells in recent weeks, the industry's statistical situation continues to remain in a favorable position. Gasoline and crude oil stocks have continued to decline, as good demand for motor fuel has offset the higher yield. However, greater crude runs to stills resulted in a further increase in gas and fuel oil stocks, forecasting the necessity for curbing crude oil production so as to offset the need for drastic restrictions during the winter.

Production Up

Latest figures of the American Petroleum Institute show that crude production has risen nearly 300,000 barrels daily during the month of July. Daily average output of wells in the United States during the week ending July 16 was 3,343,100 barrels, an increase over the preceding week of 46,850 barrels. This figure was 6 percent less than was produced a year ago, despite the recent advances. However, it is to be remembered that crude oil production was setting new peak records a year ago, and that the huge output resulted in increases in stocks.

In view of the desirability of keeping stocks at relatively low levels, it would seem advisable that August allowables for production should not be advanced greatly from July allocations.

Gasoline Stocks Down

Despite the recent gain in crude production, gasoline stocks dipped 1,172,000 barrels from July 9 to July 16, reports the American Petroleum Institute. Gasoline stocks now amount to 78,721,000 barrels, which is still 8½ percent higher than a year ago, although 14,481,000 barrels lower than the peak reached on March 19 this year.

Crude runs to stills expanded during the period, jumping from 3,095,000 to 3,195,000 barrels daily. This was 6.4 percent less than in the corresponding week in 1937.

Crude Stocks at Low

A drop of 1,197,000 barrels in crude stocks during the week brought them to 290,467,000 barrels, which is 5½ percent below the level of a year ago,

and just a few million barrels above the 17-year low reached in January, 1937. Stocks of crude oil have decreased approximately 17 million barrels since the last of March of this year, having dropped for 12 successive weeks.

Fuel Oil Rises

The unhealthy angle of the inventory situation lies in gas and fuel oil stocks, which continue to rise. Such stocks now have reached a total of 142,068,000 barrels, which is 35 percent higher than a year ago. This addition of 35,000,000 barrels is going to make trouble next winter, unless crude production is cut back sufficiently to permit withdrawal from storage and crude runs to stills are held in check. Unless arrangements are made for reducing this growing volume of gas and fuel oil next winter, the stability of the market will be menaced. Moreover, it also is important that crude runs to stills be curtailed next winter so as not to increase gasoline stocks, which have not been reduced sufficiently.

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
June 26, 1937	3,529,600	3,235,000	307,679,000	75,427,000	100,395,000
July 31	3,591,900	3,425,000	308,250,000	70,872,000	108,209,000
August 29	*3,731,450	3,425,000	309,506,000	66,997,000	112,111,000
September 25	3,666,300	*3,455,000	307,974,000	65,620,000	116,472,000
October 2	3,647,450	3,400,000	309,036,000	65,266,000	117,076,000
October 30	3,602,950	3,345,000	307,140,000	66,836,000	121,070,000
November 27	3,425,800	3,325,000	304,156,000	68,544,000	121,616,000
December 25	3,492,600	3,245,000	303,294,000	74,437,000	118,659,000
January 1, 1938	3,436,600	3,320,000	303,468,000	77,291,000	118,660,000
January 29	3,357,650	3,170,000	304,286,000	84,844,000	118,793,000
February 26	3,322,800	3,170,000	305,167,000	90,719,000	120,958,000
March 19	3,322,550	3,080,000	306,380,000	*93,192,000	122,067,000
March 26	3,405,600	3,080,000	307,557,000	92,858,000	122,979,000
April 30	3,396,150	3,215,000	307,147,000	91,339,000	128,270,000
May 28	3,098,650	3,150,000	301,583,000	87,946,000	134,315,000
June 25	3,083,900	3,025,000	293,463,000	82,412,000	137,801,000
July 2	3,058,550	3,095,000	291,666,000	80,634,000	138,903,000
July 9	3,296,250	3,095,000	290,469,000	79,893,000	140,587,000
July 16, 1938	3,343,100	3,195,000	.....	78,721,000	142,068,000
July 17, 1937	3,557,950	3,415,000	†307,255,000	72,546,000	105,085,000
Change in past year	—6.0%	—6.4%	—5.5%	+8.5%	+35.2%

* All time peak. † Stocks, July 10, 1937.

Prices of industry remain unchanged

The oil industry maintained its prices, both for refined and raw materials, during the past week. With gasoline stocks dipping sharply again, the refined market retained its strength, despite some reports of shipments being off from the early July pace.

Group 3 prices for all grades of gasoline and natural gasoline remained unchanged from the preceding week, as did East Texas postings. Although light kerosene demand was reported in the Mid-Continent along with freer offerings, the same prices as existed a week previous were still in force.

Oklahoma Retail War

A retail price "war" developed in Oklahoma City during the week. Independent stations were selling for 15 to 19 cents a gallon for the standard or middle grade, with 19 cents the top for the better grade. Third grade gasoline in a few instances was being sold for 12 to 12½ cents a gallon, but generally was priced at 14 cents.

In most instances, prices of refined products late last week were the same as one week previously.

Natural Gasoline

Natural gasoline, grade 26-70, was priced generally in the Mid-Continent markets f.o.b. refineries at 2⅝ cents a gallon, and sales were reported at 2½ cents f.o.b. Breckenridge, Texas.

Gasoline at Refineries

U. S. Motor gasoline ranged in the Group 3 market last week about as follows: 62 octane and below, 4¾ to 5 cents a gallon; 63 to 66 octane, 5 to 5⅛ cents; 67 to 69 octane, 5¼ to 5½ cents; 70 to 72 octane, 5½ to 5¾ cents.

Corresponding prices in the Chicago markets were 4⅝ to 5 cents, 4¾ to 5 cents, 5 to 5¼ cents, and 5⅛ to 5⅝ cents.

In East Texas the most common gaso-

Gulf invokes pipe line proration at Rodessa

Shreveport, La.—For the second time Gulf Pipe Line Company at Rodessa has invoked pipe line proration in that district, having just reduced runs from all leases to which it is connected 20 percent. Standard Pipe Line Company may give relief, however, as it has been contemplating taking Gulf's connections in Caddo Parish, Louisiana, and Miller County Arkansas, the consummation of this having been delayed by Gulf's desire to sell its gathering system along the connections. Standard is reported to have a steady demand for 20,000 barrels daily and recently has been buying only 18,000 barrels, as compared to 24,000 barrels, the natural decline of the wells to which it was connected largely accounting for the decline in purchases.

CRUDE OIL PRICES

Complete tables of prices paid for crude oil at the well in principal fields were shown on pages 50 and 51 of the July 4 issue. The complete schedule appears only in the first issue of each month.

line, 60-62, 400 end point, was priced generally from 4⅝ to 4¾ cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 4¼ to 4⅜ cents a gallon for the 41-43 water white grade, and from 4½ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3¾ to 4¼ cents and 4⅛ to 4½ cents.

Fuel Oil

Fuel oil prices were generally the same as in the previous week. In the Chicago market range oil was priced from 3¾ to 3⅞ cents a gallon. The No. 1 white oil was priced from 3½ to 3⅞ cents, and No. 1 straw from 3½ to 3⅝ cents. No. 2 straw was 3¼ to 3⅝ cents. No. 3 oil was 3 to 3¼ cents. No. 5 oils were 65 to 75 cents for domestic and 60 to 65 cents for industrial sales. The No. 6 oil was quoted to the usual industrial customers at 40 to 50 cents a barrel.

Mid-West to purchase in Artesia, beginning August

Artesia, New Mexico.—Mid-West Refining Company is scheduled to enter the Artesia district as a crude purchaser early in August. The company is nearing completion on the construction of a 1200-barrel capacity skimming plant near Artesia. Errol C. Holt and Mack Hall, both of Dallas, Texas, organized the above company. They previously operated refineries in the East Texas field and North Texas.

Crude Production

Kansas and Texas influence gain in output; California, Oklahoma and Louisiana decline

CRUDE flow in the United States showed a relatively small increase of 7225 barrels in the week ended July 23, having averaged 3,345,250 barrels daily. That was 52,850 barrels less than the average daily output estimated by the Bureau of Mines as required by the market during July.

Kansas accounted for most of the gain, although Texas showed also a small increase. Minor declines were reported from the remaining three principal producing states.

Texas last week averaged 1,385,700 barrels daily, or 6200 more than in the previous week, 25,400 barrels more than the Bureau of Mines recommendations and 26,508 barrels more than the allowable prescribed by the state.

Kansas ouput was up 14,050 at 157,725 barrels daily, which was 14,575 barrels a day less than the federal bureau's estimate of demand and 7275 barrels less than the state allowable.

California production declined 5700 barrels to 664,500 daily, and exceeded the indicated market demand 22,200 barrels and the recommendation of the Central Committee of California Oil Producers 44,500 barrels a day.

Oklahoma output was down 8200 barrels at 434,275 barrels daily, remaining under the Bureau of Mines estimate 84,125 barrels, but exceeded the state allowable 6275 barrels daily.

Louisiana showed a small decline of 975 barrels a day, averaging 265,400 barrels daily, which was 4800 barrels more than the federal allocation and exceeded the state allowable 15,675 barrels a day.

Refinery fire may curtail Allegany

Possible curtailment of crude production in the Allegany field was indicated by Peter H. Curry, president of the South Penn Oil Company, following an estimated $5,000,000 to $6,000,000 damage to the Sinclair Oil Company's refinery at Wellsville, New York. The plant, which had a capacity from 8000 to 10,000 barrels a day, is expected to be shut down for several weeks.

Three persons were killed and 100 suffered minor injuries while fighting the fire which raged for two days and two nights before being brought under control.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in July)	State Allowable in July	BARRELS DAILY FOR WEEK ENDED July 23	July 16
TEXAS—				
Texas Panhandle	.....	.....	68,300	63,700
North Texas	.....	.....	79,200	80,200
West Central Texas	.....	.....	30,600	30,100
West Texas	.....	.....	217,200	215,300
East Central Texas	.....	.....	100,200	99,700
East Texas Field	.....	.....	438,600	436,600
South Texas	.....	.....	239,200	241,200
Texas Gulf Coast	.....	.....	212,400	212,700
Total Texas	1,360,300	1,359,192†	1,385,700	1,379,500
CALIFORNIA—				
Long Beach	.....	.....	59,800	59,600
Santa Fe Springs	.....	.....	32,900	33,500
Huntington Beach	.....	.....	31,700	33,700
Dominguez	.....	.....	23,900	24,000
Ventura Avenue	.....	.....	35,800	33,900
Midway-Sunset	.....	.....	63,800	70,300
Kettleman Hills	.....	.....	67,300	65,400
Wilmington	.....	.....	92,800	99,700
Others	.....	.....	256,500	250,100
Total California	642,300	620,000*	664,500	670,200
OKLAHOMA—				
Oklahoma City	.....	.....	104,450	105,025
Seminole Area	.....	.....	90,050	91,350
Fitts	.....	.....	40,525	36,925
Others	.....	.....	199,250	209,175
Total Oklahoma	519,400	428,000	434,275	442,475
LOUISIANA—				
North Louisiana	.....	.....	80,800	80,675
South Louisiana	.....	.....	184,600	185,700
Total Louisiana	260,600	249,725	265,400	266,375

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in July)	State Allowable in July	BARRELS DAILY FOR WEEK ENDED July 23	July 16
KANSAS—				
Burrton-Haven	.....	.....	9,500	9,625
Russell County	.....	.....	23,175	22,425
Silica	.....	.....	11,625	10,950
Others	.....	.....	113,425	100,675
Total Kansas	172,300	165,000	157,725	143,675
NEW MEXICO	112,900	101,600	101,700	102,100
MICHIGAN	56,400	.....	54,350	53,800
ARKANSAS	51,000	.....	58,200	57,600
MOUNTAIN STATES—				
Wyoming	55,500	.....	57,900	58,600
Montana	13,500	.....	13,100	13,600
Colorado	5,200	.....	3,850	3,800
Total Mountain States	74,200	.....	74,850	76,000
EASTERN STATES—				
Pennsylvania Grade	.....	.....	78,200	77,800
Southern Illinois (New Pools)	.....	.....	30,650	30,150
Illinois-Indiana (Old Pools)	.....	.....	13,800	13,250
Others, Eastern	.....	.....	25,900	25,100
Total Eastern States	149,700	.....	148,550	146,300
Total United States	3,398,100	.....	3,345,250	3,338,025

† Daily average, considering Sunday shut-downs.

* Recommendation of Central Committee of California Oil Producers.

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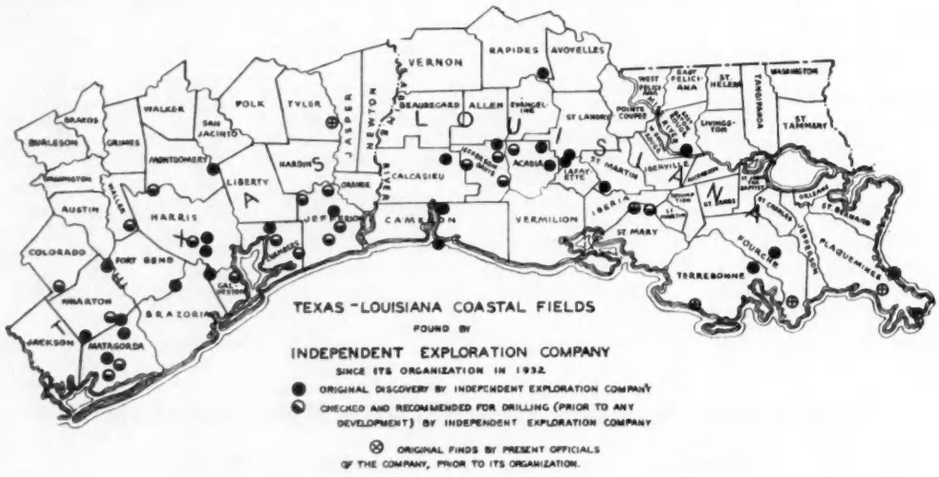

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Experienced in 22 States and in Foreign Fields

WEEK'S DRILLING HIGHLIGHTS

A DRILL stem test near Gibson field, Terrebonne Parish, Louisiana indiacted not only a new sand but a considerable extension for the field. A wildcat 2½ miles southeast of Lirette field, same parish, showed gas and distillate at 11,178 feet. The second well in Creole field, off the shore of Cameron Parish and in the Gulf, cored 8 feet of oil sand.

A well 7000 feet northeast of production at Fairbanks, Harris County, Texas, indicated an extension and a new sand. In the same county Clear Lake field's first oil well was completed. Flank wells added to the reserve rating of two older fields.

Southwest Texas

Alice field got two extensions, one ¼ mile southwest by a Vicksburg producer, another 4500 feet east by a Frio sand distillate producer. A new Frio sand oil field is being opened on the Woodsboro prospect in Refugio County. Sweden field of Duval County was extended west and got a new sand at 4900 feet. Tesoro field chalked up a new Frio sand at 2785 feet and an extension. A new Cockfield sand area north of Oilton, Webb County, will receive an active development campaign as the pay is only 2450 feet deep. La Reforma prospect looks like a distillate field at 5928 feet, Frio formation.

Kansas-Oklahoma

Coralena pool of Russell County, Kansas, got two extensions. In Rice County a Lansing line extension to Harbiger pool may create an extensive drilling campaign, while Wilcox sand was proven productive in the old Burrton field. Cowley County entered the picture with an extension for Frog Hollow field and introduction of Mississippi lime as a new producing horizon for the Weathered pool. Another well in Butler County indicated either an extension for Brandt or a new field.

Ramsey pool's half mile south outpost in Oklahoma found Wilcox sand dry, but a deep well was added to the deep play of Fox-Milroy pool, Carter County.

North Texas

Archer County in North Texas flashed to the fore with promise of a new 40-gravity pool 9½ miles southeast of K-M-A and 4 miles east by north of the multiple zone Panther pool.

California-Rocky Mountain

Discovery of a new gas field near San Francisco has opened a drilling campaign to increase the natural reserves of California's public utility companies. In Wyoming, Lance Creek field appeared due for another extension, almost a mile south and east, in an outpost which cored Leo sand oil saturation and no water. Kevin Sunburst and Cut Bank fields, Montana, were brought closer together by a producer.

Illinois-Michigan

Raccoon Township pool's second well flowed 220 barrels in 2-1/3 hours to confirm the Illinois discovery. South of St. Elmo field in Fayette County ¾ mile, a wildcat cored 49 feet of saturation in Stein sand. Crawford County's first deep test cored Niagara lime saturation at 2845 feet.

Michigan's recent Clare County strike has started 9 new operations, and a wildcat showing in Allegan County is expected to revive activity in that part of the state.

Miscellaneous

Vacuum field's westward trend in New Mexico may be partially checked by a failure in lime at 4860 feet. In West Texas, a Gaines County wildcat eight miles southeast of Seagraves recovered 7 feet of nominally saturated lime and will test. Shreveport's discovery well in North Louisiana flowed 499 barrels of 43.8 gravity oil through ¼-inch tubing choke; the operators want 40-acre spacing for the new field, Caddo Parish's politicos want no spacing restrictions.

Comparison of Permits Granted for New Wells

STATE	Week Ending July 23	Total this Mo.	Total this Year	Total this Date Last Year	1937 Year Total
Arkansas	6	33	145	120	240
California	22	86	691	874	1,584
Louisiana	29	119	753	681	1,227
Kansas	29	102	882	1,549	2,663
Michigan	16	51	423	557	958
Oklahoma	47	146	1,161	1,700	2,711
Texas	290	819	7,677	10,408	17,238
Total	439	1,356	11,732	15,889	26,621

Summary of Wells Completed in the United States Week Ending July 23, 1938

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total, 1938	Total this Date, 1937
Alabama	.....	.....	.....	.....	.....	2	1
Arkansas	3	3	.....	.....	2,116	131	48
California	21	18	.....	3	25,091	696	790
Colorado	.....	.....	.....	.....	.....	5	6
Florida	.....	.....	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	1	.....
Illinois	56	48	.....	8	12,264	636	85
Indiana	.....	.....	.....	.....	.....	70	70
Kansas	27	20	2	5	19,709	986	1,449
Kentucky	17	12	.....	5	1,603	409	191
Louisiana	32	21	3	8	10,465	621	478
Michigan	14	4	2	8	450	468	508
Mississippi	.....	.....	.....	.....	.....	11	6
Montana	1	1	.....	.....	30	33	97
Nebraska	.....	.....	.....	.....	.....	1	.....
New Mexico	15	12	1	2	4,705	295	401
New York	*14	12	2	.....	76	*408	*648
Ohio	21	8	7	6	234	525	809
Oklahoma	47	27	3	17	4,888	1,252	1,820
Pennsylvania	*36	34	.....	2	32	*1,260	*1,623
Tennessee	.....	.....	.....	.....	.....	2	.....
Texas	240	180	9	51	251,280	7,433	8,466
Utah	.....	.....	.....	.....	.....	2	.....
West Virginia	15	2	11	2	10	398	498
Wyoming	4	2	.....	2	39	60	59
Total this week	563	404	40	119	332,992	15,705	18,053
Total last week	463	307	28	128	266,810	.....	.....
Total this year	15,705	10,859	1,145	3,701	11,055,535	.....	.....

* Includes water-intake and pressure wells.

Kansas Fields

Mississippi lime productive in Weathered field. Coralena and Habiger get important extensions. Wilcox sand proves in Burrton test.

Wichita.—Extensions of older Kansas pools, some in the eastern part of the state, dominated the week of development. There were two extensions for the Coralena pool, Russell County. A well in the Lansing lime southeast of the Habiger area, Rice County, indicates an active drilling campaign. In Cowley County the Weathered pool drew a Mississippi lime flowing well, the first for the field from that formation and the outstanding well of the week in Kansas. A second acid treatment of the Ford County wildcat of Sinclair Prairie Oil Company was sufficiently encouraging to warrant erecting tanks and separator. Wilcox sand was found productive in the Burrton field.

Two extensions were registered for the Coralena pool, Russell County. East of the pool a half mile W. I. Southern, Inc., made a well of No. 1 Letsch, NE SW SW 17-15-13w, where a showing was indicated by a core last week. After treatment with 500 gallons of acid in the Arbuckle lime, total depth 3230 feet, the well pumped 308 barrels in 8 hours. To the northeast R. H. Shields, Rogg 1, C EL S½ NW, shut down for a test of the Kansas City lime when oil rose 750 feet in the hole from 2985 feet. Production in the pool is from both the Kansas City and the Arbuckle limes.

The largest well in Kansas for the week came with the discovery of Mississippi lime production in the old Weathered pool, Cowley County, which produces from the Lansing lime and the Arbuckle lime. After treatment with 4000 gallons of acid, Wilson 3, SE NE NW 4-32-3e, flowed 3125 barrels, total depth 3150 feet. Oil began rising in the hole after the lime was entered and had risen to 3000 feet previous to acid treatment. The pool has 20 wells producing from the Arbuckle lime and two producing from the Lansing lime.

Tanks and separators are being set for further testing of the Ford County wildcat of Sinclair Prairie Oil Company, Young 1, C SL NE 34-27-24w, which began flowing oil, gas and water after acid treatment last week. The well was given a second treatment with 1000 gallons of acid at the same plugged back depth 5025 feet. Top of the Mississippi lime was logged at 4890 feet and casing set at 4886 feet. The well was drilled to 5930 feet and formations from the Arbuckle lime, topped at 5629 feet, were tested previous to gaining the flow from the Mississippi lime.

An extension in the Habiger area, Rice County, brings that area into the limelight and indicates an extensive drilling campaign. A. G. Kaiser and C. L. Carlock's Heinz 1, NWc SE 7-18-10w, found the Lansing lime productive at 3019 feet, when oil rose 900 feet in the hole. The well is a mile and a quarter southeast of the spot where the first flowing wells were found on the Habiger farm and a mile south of the area where deeper Arbuckle lime production was found in four wells. These wells were drilled to the Arbuckle when the Lansing was found either dry or low in output. The nearby Stumps and Bushton fields produce from both Lansing and Arbuckle limes.

In the old Burrton pool, Rice County, Olson Oil Company added the Wilcox sand as a producing formation when it drilled deeper in Downie 1, SE SW NE 14-23-4w. It pumped 125 barrels of oil and 70 barrels of water from the Wilcox sand at 3727 feet. This is the only Wilcox sand production in the field.

KANSAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton County—		
Shell Pet., Hoffman A-2, se ne nw 7-16-13w	2200	3359
Cities Service, Bitter D-2, nec 8-16-13w	225	3392
Shell Pet., Schneider 7-B, sw ne nw 1-16-14w	1081	3297
Gulf, Nichols 4, sw nw sw 12-20-11w	1687	3283
Butler County—		
Rex & Morris, Hutton 1, nw sw sw 14-28-7e	50	2702
Republic Gas, Cannon 1, se ne sw 15-28-7e	8	2697
Cowley County—		
Texas, Hittle 6, sw se se 21-31-4e	2454	3324
Trees Oil, Lewis 3, ne nw ne 28-31-4e	1099	3328
Ellsworth County—		
I. T. I. O., Boge 1, sw sw nw 16-16-10w	1824	3353
Greenwood County—		
Katz Christy 4, se se sw 12-26-9e	*	2622
Harvey County—		
E. J. Shaffer, Doles 1, csw sw 20-23-3	70	3430
Kearny County—		
Tri-Co. Gas, Masonic Home 2, ne se ne 6-26-35w	¶7	2690
Ness County—		
Carpenter & Oriental Oil, Shiner 1, swc ne 19-18-25	25	4459
Pawnee County—		
Kessler Oil, Smith 1, swc ne 13-20-16	610	3810
Pratt County—		
Tidewater, Jarbo 1, cn¼ se 25-26-14	*	4511
Rice County—		
Continental, Geoth 5, nwc sw 32-20-7w	237	3348
Drillers Gas, Lyons 1, c nw se 2-20-8	†34.5	3301
Mid-Plains, Engelland 1, nw nw sw 15-21-7	248	3423
Russell County—		
C. B. Davis, Gaynor 2, nw ne nw 19-13-14	885	2945
Sedgwick County—		
G. Fuller, Warren 1, nw nw ne 21-25-1e	883	3002
Stafford County—		
Atlantic Ref., Gates 6, se se se 27-21-14	2514	3656
Magnolia, Gates 1, ne ne ne 34-21-13	2561	3650
Stanolind, Mettscher 2, se se nw 13-22-13	244	3699
Sinclair, McComb 1, nw nw sw 24-24-11w	804	3812
Sumner County—		
Haypenny et al, Evers 1, nw sw ne 27-31-2e	*	2030
Woodson County—		
Steinbuschel States 1, sw ne nw 15-26-14e	*	1548

*Failures; †Junked; ¶Million cu. ft. gas.

Cowley County

The Frog Hollow pool was extended a half mile northwest by B. B. Blair and the Tulsa Oil Corporation, whose Dunlop 1, SW NW NE 21-32-5e, made a flow from the Wilcox sand at 2931 feet.

Either an extension for the Brandt pool, Butler County, or a new pool was indicated by a showing from the Mississippi lime, total depth 2762 feet, in the test of John Harwood and associates' Sawyer 1, SE NE NE 10-28-7e. The showing indicated pumping production of around 50 barrels. The well is a mile and a quarter northwest of the pool.

Inability to get satisfactory production from the Wilcox sand showing in the Barber County wildcat of Pryor and Lockhart, Grant 1-C, C NE NE 18-31-13w, was responsible for the decision to drill to the Arbuckle lime. In case the lime is not productive the hole will be plugged back to the Wilcox sand for further testing. This well, a southeast offset to the single Viola lime producer in the Lake City field, has been spraying and swabbing small amounts of oil from the Wilcox sand, total depth 4548 feet, for several weeks. The formation has been given small shots, which have left difficult cleaning out jobs.

Acid treatment brought a 200-barrel output on the pump for the Lansing lime showing of last week, when Crown Petroleum Company and associates found the formation saturated at 3249 feet. A load of 4000 gallons further indicated a new pool a mile and a half northwest of the Ellinwood pool. It was shut down after the first pumping test.

A pumping test is to be made because of the showing last week in the wildcat southeast of the Big Creek field, Russell County, where Aylward Production Company had a showing from the Arbuckle lime, total depth 3253 feet in Solback 1, SE NE 31-14-14w.

A McPherson County wildcat was started by Continental Oil Company's Meyer 1, SEc 19-21-1w, a quarter of a mile west of production in the Graber pool and a quarter of a mile south of a dry hole.

In Russell County Mid-Continent Petroleum Corporation was rigging up for a wildcat test, Rogg 1, NW NE 32-14-13w.

Shell Petroleum Corporation will drill 10 wells in proven territory in the Trapp pool, Barton County.

Northwest Graham County is showing for oil in Schlemeyer et al's Belveal 1, C SE NW 3-8s-24w, farthest northwest wildcat drilling on uplift trend. The well showed for first oil when it topped Kansas City lime at 3585 feet, and found saturation at 3608 feet. Again at 3645 to 3650 feet cuttings showed oil. Gas was had at 3682 to 3684 feet and another oil show was encountered between 3854 and 3856 feet. The hole was being continued to deeper strata. If this test makes a producer it will be the outpost pool of the Barton Arch trend of development.

Oklahoma Fields

Oolitic lime producer added to Fox-Milroy area. Ramsey field defined by wildcat half mile south.

Tulsa.—Field work in Oklahoma was confined to a drab routine last week. An Oolitic lime producer was added to the Fox-Milroy area, where a deep drilling campaign has been underway more than a year. The Ramsey pool of Payne County got its tenth Wilcox sand producer, while a wildcat, E. H. Moore, Inc.'s Means 1, NW NE NW 19-18n-2e, was abandoned after showing salt water in the Wilcox sand. The well was a half mile south of Ramsey production and indicates that this pool will be small.

An outpost wildcat announced will be drilled by Continental Oil Company on a block of 31,000 acres in Beckham and Washita counties in the western part of the state. Location has been made for Proctor 1, C NW 28-10n-20w. Fain Drilling Company has the contract.

The Oolitic lime producer in the Fox-Milroy area of Carter and Stephens counties is Johnson 1-A of Gulf Oil Corporation, which has made two flows and is waiting for tanks for further testing. It is in C SE NW 27-2s-3w, Carter County, north of the Ruth Williams deep discovery well of the area. Casing was set at 7757 feet with top of the lime at 7786, total depth 7828 feet. After treatment with 5000 gallons of acid the well flowed 1085 barrels in 6 hours and 45 minutes through tubing. The next flow of 40 minutes was 492 barrels of 44.9 gravity oil.

In the same section Carter Oil Company had an accident in setting casing in Feagin 1, C NW SW 27-2s-3w, in which 7-inch casing was landed at 7980 feet and 400 sacks of cement used. Before it had set the casing broke 102 feet from the top of the hole, allowing the pipe to settle to the bottom. Nothing will be done until the cement has set.

Harley 1, C NW NW 19-2s-3w, drilled by Carter Oil Company as an east offset to the Harley Community deep producer in Stephens County, is preparing to cut casing at plugged back depth of 6350 feet. This well was drilled to 8208 feet and formations have been tested at several points up the hole without success.

Another producer was added to the Frederick pool, Tillman County, by Indian Territory Illuminating Oil Company and Foster Minerals Company's Graham 3, SW NE 1-3s-19w, which swabbed 200 barrels from the Canyon lime, 3092 to 3122 feet. The well will be acid treated before further testing. The Indian Territory Illuminating Oil Company has made another location in the field, Goodwin 1, NW SE 1-3s-19w.

Two more wells have been started around the Kay County wildcat drilled by Helmerich & Payne, School Land 1, SW SE SW 16-28n-1w, which is now producing its 15,000 barrels of discovery oil. Ohio Oil Company, which owns an interest in the discovery well, has made location for a south offset, L. Wilbur 1, NW NE NW 21-28n-1w. Northwest of the producer E. J. Shafer is building rig for Hounstatt 1, NW NE 17-28n-1w. This gives the area three drilling wells. The locations are on a 10-acre spacing program.

The Wilcox sand was found dry in the Logan County wildcat 2 miles south of the Crescent pool, where Superior Oil Company of California is drilling McCully 1, C W½ NW NW 26-16n-4w. Top of the Wilcox sand was found at 6480 feet, and at 6550 feet the drill was still in hard, white dry Wilcox sand with nothing showing.

This part of the state, however, continued to draw wildcat tests. A half mile north of the Britton townsite and a quarter of a mile east of production in the South Britton field, Kerlyn Oil Company has made a deal to drill in orphanage land, SE SW NW 21-13n-3w. In Garfield County, Chester H. Westfall of Ponca City has taken a school land lease which involves a drilling contract in Section 36-24n-8w. This well is south of the wildcat being drilled by Champlin Refining Company, Boehm 1, SW SW NE 4-24n-8w. A Noble County wildcat due to start by July 21 will be Big Chief Drilling Company's Taylor 1, NWc 23-8n-2w.

Water continues to plague the Wilcox sand discovery of W. A. Delaney, Burgher 1, SE SE SW 12-7n-2e, which is equipped with submersible pumping equipment at plugged back depth of 7672 feet.

Farther south in Garvin County, First National Oil Company's Butterly 1, NE NE SE 28-1n-1e, had a show of oil at 3017 feet, where a drill stem test may be made. Two weeks ago this test had a small gas show from a sand between 2105 and 2130 feet.

An increase in oil output with a decrease in water came from further testing of the Hughes County wildcat of Phillips Petroleum Company, Becker 1, NE NW NW 8-5n-10e. With a packer set at 5686 feet it flowed 1710 barrels of oil and 390 barrels of water in 10 hours. This wildcat was drilled to 6283 feet early this year. All tests have had water along with oil. Earlier this month it flowed 629 barrels of oil and 1887 barrels of water with a plug set at 5632 feet. Although it was considered as a pool opener, failure to get a satisfactory completion has left the area without further tests.

Another oil show from a core in the Meisner sand and the Hunton lime brought a decision to set another string of pipe in the Lincoln County wildcat of Indian States Oil Company, Bailey 1, NWc NE 2-12n-15e. The core from 4225 to 4238 feet had 6 inches of the Meisner and 5 feet of Hunton lime saturated. Previously 7-inch casing was set at 3210 feet to test the Prue sand, top 3222 feet, after a core showed saturation.

The tenth producing well for the Ramsey field, Payne County, was completed last week, Ramsey 4, SW SE NW 18-18n-2e, which made potential rating of 8500 barrels after 5-hour flow from the Wilcox sand, top 4733 feet, total depth 4767 feet. This was the only drilling well in the field. The completion leaves the necessity of drilling two offsets. The producing wells are within the community block, which is being operated by Mid-Continent Petroleum Corporation.

OKLAHOMA
Completions

Company, Well and Location	Init. rodP. Bbls.	Depth
Beckham County—		
Westoak Gasoline, Barton 1, cs½ s½ 14-9n-25w	*	3700
Westoak, Anderson 1A, c nw¼ 15-9n-25w	*	4005
Caddo County—		
Magnolia, Surbeck 8, se se se 3-5n-9w	55	3755
Carter County—		
Shell, Johnson 22, nw se sw 4-4s-3w (pb 1034)	30	1091
Magnolia, Chilton 27, se se nw 4-4s-3w	91	1032
Sinclair Prairie, Million 31, se se se 5-4s-3w	*	1039
Shell, Horton 21, nw nw se 6-4s-3w (pb 1187)	45	1190
Comanche County—		
Wichita School Land 9, se ne ne ne 20-2n-10w	*	1015
Creek County—		
McAdams, McKellop 1, sw nw ne 30-17n-10e	*	2270
Garvin County—		
Cox, Craig 3, nw ne nw 32-1n-3w	134	2427
Hughes County—		
Winona, Dale 1, se se nw 17-7n-8e	*	4344
McGee, Bank of Comm. nwc nw 12-9n-10e	*	1220
Jefferson County—		
Yingling, Seay 3, se nw ne 3-7s-5w	*	1453
Lincoln County—		
Mudge, May 1, sw nw se 10-14n-6e	25	2948
Helmerich, Fitch 6, ne sw ne 15-14n-6e	60	2990
Logan County—		
Sinclair Prairie, Crews 1, sw sw ne 27-16n-1e (pb 5220)	357	5238
Marshall County—		
McGlothlin, Haggart 4, se se ne 25-7s-5e	8	505
Oklahoma County—		
Southwest, Shelton 1, ne sw se ne 35-12n-3w	*	6358
Okmulgee County—		
Coyle, Sutton 11, se sw sw 33-14n-14e	10	1250
Lincoln, Roberts 19, ne sw sw 29-15n-14e	*	1797
Osage County—		
I. T. I. O., 455, nw sw sw 29-26n-11e (pb 1900)	¶1	2600
Sinclair Prairie, Berger 7, nw ne ne se 17-21n-8e	40	2119
Johnson, Edmiston 7, ne se sw 30-21n-9e	1½	336
Osage County—		
Norbla, 2, sw sw se 30-22n-9e	¶4	2304
Wah-sha-she, 1, ne ne sw 5-28n-9e	*	2432
M. R. Thomas, Ackley 1, se se se 14-20n-9e	¶1	1371
Pontotoc County—		
Mid-Continent, Statler 3, se ne sw 2-1n-7e (otd 4510)	15	4477
Sunray, Humard 1, ne sw se 2-1n-7e (pb 3975)	25	4549
Carter, L. Brown 1, nw se se 25-2n-6e (otd 4300)	27	4220
Phillips, Norris 5, nw se sw 25-2n-6e	85	4340
Simpson Roadhouse, Illinois 1, nw ne nw 28-2n-6e	126	3185
Moore, Frazier 1, ne sw nw (otd 3859)	24	1332
Sinclair Prairie, Starrett 1A, se nw ne 21-5n-5e	187	2545
Osborn, Busby 1, nw nw sw	119	2566
Pottawatomie County—		
Marydun, Caudle 1A, nw nw nw	*	3380
Pioneer, Billington 1, nw ne sw 36-7n-4e	120	4220
Magnolia, Nicklas 3, ne nw nw 31 7n-5e	314	4210
Hall, Colman 2, se nw nw 33-7n-5e	907	4037
Trigg, Canfield 1, nw nw sw 33-7n-5e	1500	4060
Magnolia, McMoran 1, sw sw nw (input well)	*	4932
Seminole—		
Sun, Swan 1, sw se sw 18-6w-6e	*	4170
J. T. Smith, Sparks 2, nw nw se 32-7n-6e	440	2917
Carter, Keokuk 3, cn½ sw ne	108	4151
Bryan Pet., Ward 1, sw nw nw 3-6n-6e	*	2893
W. B. Pine, Cheparney 12, sw nw sw	35	4315

*Failures; †Junked; ¶Million cu. ft. gas.

The Wyoming unit of the Independent Petroleum Association of America will hold its annual meeting at the Townsend Hotel in Casper at 6:30 Tuesday evening, July 26. Principal speakers will be Russell B. Brown, general counsel for the association, Washington, D. C., and C. E. Buchner, executive manager, Tulsa, Oklahoma. The gathering will be a dinner meeting. E. J. Sullivan, Casper, and Val M. Kirk, Cody, are Wyoming directors for the association.

EDWIN M. THARP, vice president and general manager of Ohio Fuel Gas Company, last week was awarded an honorary life membership in the Columbus Junior Chamber of Commerce.

North Texas Developments

Promise of new high gravity field in K-M-A district. Total operations in K-M-A field drop to below 200. Wildcat logs lowest structural position in area.

Wichita Falls, Texas.—Exploration of the deep lime zones in the greater K-M-A district gave promise of a new high gravity oil pool the past week. The latest strike is Fain-McGaha Oil Corporation's L. F. Wilson 1-G, NWc SE Section 44, A. T. N. C. Lands, northeastern Archer County, which yielded 225 feet of oil with 75 feet of rotary mud in 13 minutes when formation tester was used in saturated sand at 4727-58 feet. The oil is reported to have tested 40 gravity, corrected. Seven-inch pipe has been cemented at 4720 feet for a production test. The producing zone has been tentatively identified as the lower Strawn. Wilson 1-G, is located 9½ miles southeast of the K-M-A field, and 4 miles east by north of the Panther multiple lime-pay pool.

Negotiations are pending for the deepening of Louis Sikes-J. K. L. Oil Company's Ford 1, T. Cecil Survey, situated 1½ miles to the northwest, on the strength of the preliminary production performance of the Archer County wildcat. The former was abandoned in mid-June at 4202 feet after failing to develop production from saturation logged structurally low in the upper Strawn.

Less Activity

The listing of a large quota of completed oil wells and the abandonment of locations reduced the K-M-A field's total operations below 200 the past week for the first time since the fore part of March. The increase in volume of completions was largely due to pipe lines providing connections for wells that have been held back several weeks or more. Under normal conditions the field should register from 15 to 20 new wells per week for the next two months, but market congestion may lower the average.

The current drilling report accounts for 89 tests in process of completion, waiting for potential gauge, or at the Strawn pay zone. A total of 34 tests are drilling with rotary between casing points, and surface pipe has been cemented for 14 additional tests. Derricks and rigs accounted for 5 listings, while locations dropped to 48. There are 9 idle tests. This activity totals 199 operations.

Offset Performances Differ

Production performance of offset wells frequently affords unusual contrasts in the K-M-A deep sector. Sinclair Prairie Oil Company's N. H. Martin 2, BS&F Section 12, A-744, north offset to the company's first completion is a typical example. Martin 2 responded to nitro shot in broken sand, lime and shale section at 3841-72 feet with a flow of 325 barrels of oil in 15 hours. The company's first well found the pay zone higher, and required multiple nitro shots to make a 50-barrel well.

Another failure was registered on the northwest flank of the K-M-A area

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when Staley Oil Company and W. B. Omohundro's T. L. Burnett 1-B, SEc HT&B Section 2, A-507, abandoned in Ellenberger lime at 3897-3925 feet. Nominal oil saturation in Strawn at 3755-58 feet was passed up. Top of Ellenberger checks 13 feet lower structurally than the same marker logged by Perkins-Cullum's Burnett 17-A, a

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (K-M-A)—		
Staley Oil Co. et al, Mangold 3, blk 30	552	3849
Archer County (Panther)—		
Blackwell-Helmerich-Payne, Wilson-McCrory 2	880	4363
Archer County—		
Shappell Oil Co., Bell 2, sec 27	150	1029
Bell 3, sec 27	100	1037
Clay County—		
E. L. Smith Oil Co., Harrison 1, blk 145	*	1178
Sussex Oil Corp., Shumake 14, blk 4	12	1173
Cooke County—		
Nutting et al, Johnson 1	*	3410
Robinson et al, Otto 18-A, blk 5	¶1½	1240
Schermerhorn Oil Corp., Kessler 17, blk 5	31	1357
Texas Co., Trubenbach 4-B	28	931
Trumter Oil Co., Trubenbach 1	81	823
Trubenbach 2	20	818
Foard County—		
Burnham et al, Ward 1-a, sec 3	*	2366
Jack County—		
Champlin & Bass, Mantooth 2	450	3269
R. H. Dearing & Son, Touchstone 1	*	3196
Dearing et al, Kuykendall 1	230	3126
Kuykendall 2	393	3120
Gilmore et al, Hanna 7, sec 3318	*	446
Gray & Kendrick, Covington 3	*	403
Gwynn & Overby, Henderson 1	¶4	2843
Sewell et al, Sewell 3, blk 3	15	305
Montague County—		
Beck et al, Davenport 23	36	2060
Martin & Hines, King 3	326	1746
Throckmorton County—		
Zweifel et al, Lee 1	*	3924
Wichita County (K-M-A)—		
Belcher et al, Love 1	512	3983
Boller et al, Collins 1	70	3994
Bridwell Oil Co., Bridwell 1	528	3897
First Nat'l Co. 5-B, blk 27	544	3936
Burns et al, Waggoner Bros. 24, lot 15	120	3921
J. A. Chapman-Ed. McFarline, Sparks-Mayfield 6	492	3916
Consolidated Oil Co. et al, Ferguson 9, lot 8	1720	3840
Continental, Waggoner Bros. 1-B-D, sec 11	480	3830
Dorain, Geier Bros. Inc. & Jackson, Mitchell 3, sec 1	960	3893
J. E. Farrell & Co., Martin 2, sec 12	420	3850
Golding Est. & Cochran, Preston 2, sec 27	904	3919
Haberle & Thornton, Hudson 1, lot 1	432	3930
Hammon et al, Mitchell 16	375	3837
Mitchell 4-B, lot 24	504	3903
Waggoner Bros.-Gulf 4-A, lot 7	100	3910
Hammon-Hanlon & Buchanan, Fassett-Tuttle 2, sec 2	816	3951
Fassett-Tuttle 9, sec 2	720	3955
Hubbell Prod. Co., L. C. Denny 1	432	3872
Hunter et al, Waggoner Bros. 40, sec 8	280	3930
Kadane-Griffin Oil Co., Mangold 4-B, block 39	960	3833
King Oil Co., Wigley 2	1008	4172
A. P. Kouri et al, N. H. Martin 2-A	828	3768
N. H. Martin 1-B, sec 36	920	3770
Martin et al, Wichita County fee 1, sec 12	504	3867
Omohundro et al, W. L. Hodges 7	880	3867
J. R. Pace 30	816	3861
Palmer & Chenault, McCarty 11	540	3871
Roberts et al, Kempner 2, blk 18	880	3876
Vierson et al, Kempner-Tisserand 1, blk 19	300	3841
Kempner 1-B, blk 18	448	3847
Wichita County—		
Cable Oil Co., Roller 29	*	327
Burns et al, Goetze 6	*	1927
Continental Oil Co.-Pet. Producers Co., State Asylum 1, blk 1	720	5129
Rathke Oil Co., Burnett 16, sec 1	*	700
Walton et al, Gulf P. L. Co. 9, sec 24	*	847
White & Duncan, Goetze 13	200	1670
Goetze 16	*	1992
Young County—		
Strong et al, Allar Co. 1, sec 3410	*	3937
Underwood & Campbell, Campbell 31-C, sec 3401	*	905
Campbell 34-C, sec 3401	*	921

*Failures; †Junked; ¶Million cu. ft. gas.

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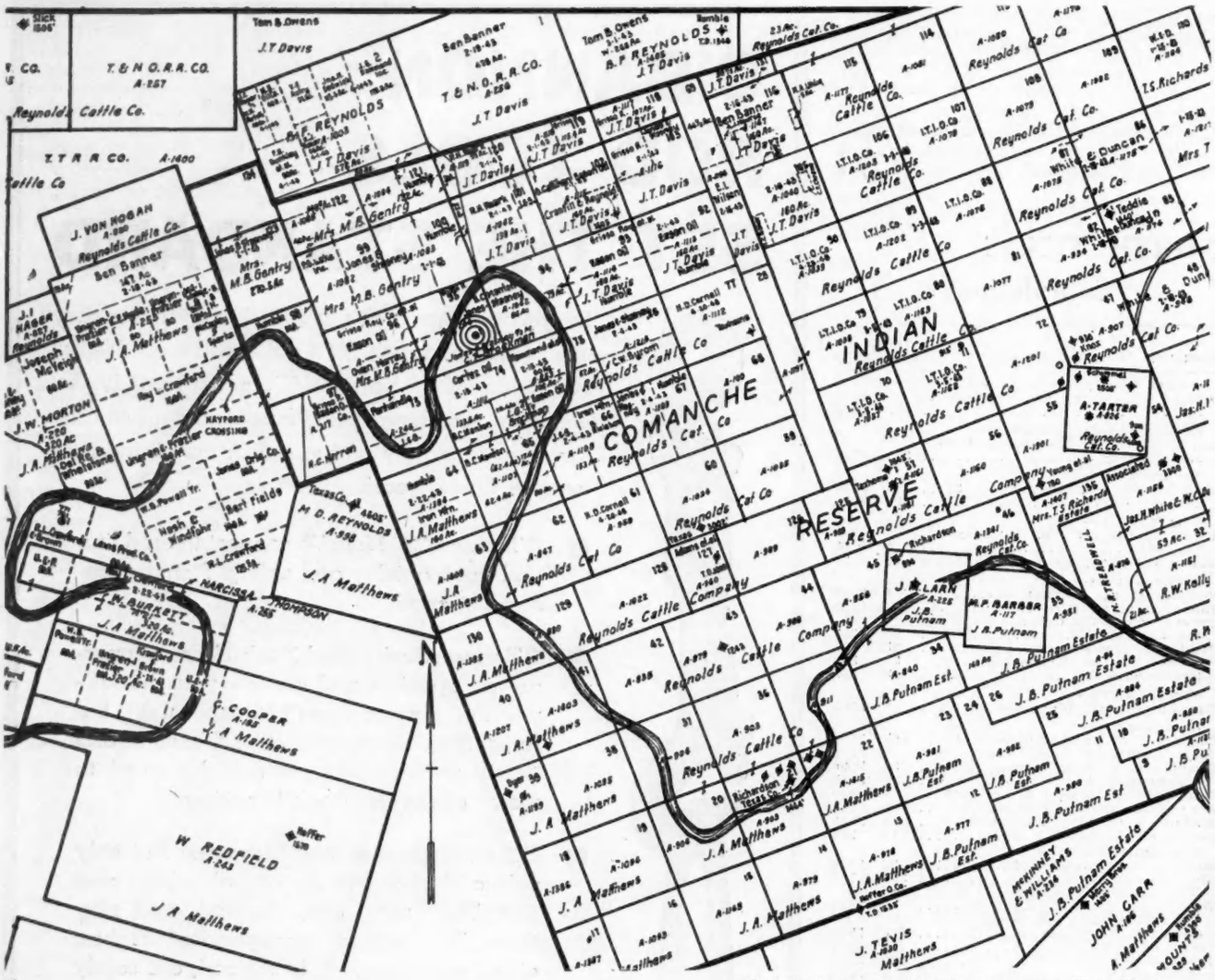
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West Texas Fields

Gaines County wildcat to test saturation in lime.
Gas in outpost for Yoakum County section of Wasson.
Acreage assigned by majors basis of wildcatting.

Midland, Texas.—A deep bedded saturated lime section penetrated by a wildcat in northeastern Gaines County last mid-week carried sufficient evidence of oil and gas to warrant a production test. Rated as being structurally low for the district, V. R. Riddle and Warr's J. B. Brown 1, C NE NE C&M Section 26, Block G, 8 miles southeast of Seagraves, logged oil stain at 5366-77 feet, and a core pulled at 5465-83 feet recovered 7 feet of nominally saturated lime with show of gas. The remaining 10-foot section was hard gray lime. Pipe is slated to be run for a production test. Top of solid lime was called at 4980 feet, with an elevation of 3283 feet. J. T. Perryman and Pure Oil Company's Doak 1, C NW NE D&W Section 43, Block H, situated 8 miles to the southeast and on the west flank of the Cedar Lake geophysical prospect, has plugged back to 5030 feet for a production test after encountering sulphur water at 5129 feet. Solid lime was topped at 4580 feet, with an elevation of 3165 feet.

To Attempt Extension

Expansion of the Yoakum County section of the Wasson field to the north is to be sought by an outpost, and a west extension is showing gas in the upper lime. Gulf Oil Corporation's L. K. Moore 1, SW NE NW Section 897, Block D, logged gas at 4789-4814 feet, with an elevation of 3613 feet, and has reduced the size of the hole for a casing seat. Solid lime was entered at 4350 feet. It is 1½ miles west of Helmerich & Payne Inc.-Continental Oil Company's Dowell-Ohio 1, which recently provided a major west extension, but is awaiting pipe line connection for completion in broken lime at 4955-5035 feet. Magnolia Petroleum Company is starting operations on J. H. Lynn 1, C SE NE Section 770, Block D, 1¾ miles northwest of nearest production. The Lynn 320-acre lease was acquired through the purchase of the Vacuum Oil Company, and requires operations before August 3.

R. H. Gill et al's S. J. Dixon-Gulf 1, situated 2-4/5 miles northwest of the Bennett field, Yoakum County, and the first major outpost for the field, cemented 7-inch pipe at 4985 feet, and is changing to cable tools at 5000 feet to deepen. Top of solid lime was logged at 4750 feet, with an elevation of 3632 feet.

Majors Assigning Acreage

Assignment of wildcat acreage by majors is the basis of a number of new exploratory tests by independents in the district. The sparsely drilled east portion of Yoakum County is slated for a 5500-foot test by H. K. Riddle et al, who have obtained 1¾ sections from Gulf Oil Corporation to drill on the Barrier tract, SE¼ Section 6, Block D, J. H. Gibson Survey. Shell Petroleum Corporation is credited with having assigned lease to R. H. Gill et al on the W½ Section 323, E½ Section 14, and the east 240 acres of Section 265, situated north of the above block.

Sun Farms Out Two

Sun Oil Company farmed out acreage that will result in the drilling of two wildcats. In Gaines County, Osage Drilling Company and A. S. Everest are starting operations on B. E. Miller-Sun 1, C SW NE WT Ry. Section 281, Block G, on a 140-acre site sublet by the above company. The location is 2½ miles northwest of nearest production in the Seminole pool, and on a direct strike with the Wasson field. Surface pipe has been set by Thomas Drilling Company and E. H. Van Patton on J. O. Carr-Sun 1, near C NE Section 4, M. N. Hines Survey, 4¾ miles north by east of the town of Big Lake, Reagan County. Sun Oil Company donated acreage from its short term block to obtain this test, and other major lease owners in the area contributed.

A shallow wildcat project several

Marginal wells account for Texas output

A report issued by the Texas Railroad Commission last week indicates that the marginal allowance to all Texas oil wells currently absorbs 1,175,214 barrels of the total daily allowable.

Of this amount 155,706 barrels is assigned to the 32,840 true marginal wells; that is, those wells which are incapable of producing more than the minimum provided in the marginal well statute. The remaining 1,019,508 barrels of marginal oil is assigned to the 49,482 wells which are incapable of producing more oil than the maximum provided in the marginal well law. The comparative figures for each of the Railroad Commission districts are shown in the attached table.

Status of the Allowables of Marginal and Proratable Wells on Texas Oil Proration Schedules Effective July 1, 1938*

DISTRICT	(1) No. Marginal Wells	(2) Barrels Marginal Oil Represented by Marginal Wells	(3) Percent of Dist. Total Allowable Represented by Marginal Wells Allowable	(4) No. Proratable Wells	(5) Barrels Marginal Oil of the Proratable Wells	(6) Barrels Proratable Oil	(7) Total No. Producing Wells (1) & (4)	(8) Total No. Barrels Marginal Oil (2) & (5)	(9) Percent of Dist. Total Allowable Represented by Marginal Oil	(10) Allowable Effective July 1, 1938 (2) (5) & (6)
1 Southwest Texas	3,108	13,007	39.0	652	12,160	8,196	3,760	25,167	75.4	33,363
2 Southwest Texas	170	2,001	3.2	1,214	29,080	31,304	1,384	31,081	49.8	62,385
3 Gulf Coast	1,537	12,138	4.9	4,606	118,095	114,413	6,143	130,233	53.2	244,646
4 Southwest Texas	1,618	11,387	6.1	4,439	92,778	82,428	6,057	104,165	55.8	186,593
5 East Central Texas	1,203	4,427	14.3	635	12,995	13,563	1,838	17,422	56.2	30,985
6 East Texas	160	1,880	2.3	1,305	32,425	45,706	1,465	34,305	42.8	80,011
6 East Texas Field	473†	5,521	1.08	24,797	495,940	10,172	25,270	501,461	98.0	511,633
7B West Central Texas	6,567	25,158	52.4	746	13,760	9,124	7,313	38,918	81.0	48,042
7C West Central Texas	204	1,527	5.3	902	19,180	7,988	1,106	20,707	72.2	28,695
8 West Texas	1,544	17,175	7.8	5,859	114,465	88,381	7,403	131,640	59.8	220,021
9 North Texas	15,273	50,157	60.1	1,454	21,170	12,098	16,727	71,327	85.5	83,425
10 Panhandle	983	11,328	13.6	2,873	57,460	14,177	3,856	68,788	82.9	82,965
	32,840 (1) 39.9 Percent of Total No. of Wells	155,706 (2)	9.7 (3)	49,482 (4) 60.1 Percent of Total No. of Wells	1,019,508 (5)	437,550 (6)	82,322 (7)	1,175,214 (8)	72.9 (9)	1,612,764 (10)

* No cognizance has been taken in this report of the Sunday shut-downs. This report merely summarizes the condition of the proration schedules as of July 1 1938, with no reductions made.

As reflected on the proration schedule effective July 1, 1938, there were 82,322 producing oil wells (Column 7) in the State of Texas. There were 49,482 proratable wells (Column 4) to share in 437,550 barrels of proratable oil (Column 6)—or an average of only 8.84 barrels daily.

† As of July 1, 1938, there were 25,270 wells in the East Texas Field which had a total daily allowable of 511,633 barrels, of which 501,461 were absorbed by marginal allowance, leaving only 10,172 barrels of proratable oil to be allocated to the 24,797 proratable wells in the field. This figure represents the number of marginal wells and barrels of marginal oil represented by marginal wells as shown by our records, which are recognized to be incomplete in this respect.

miles northwest of the recently discovered Crockett pool, northwestern Crockett County, is reported to be scheduled by J. N. Gregory and Bruce McKague. They obtained lease on Section 4, GC&SF Survey, Block B, and Section 4, T.C. Ry. Survey, Block W, situated on the Crockett-Upton County line.

Lost Bailer Delays

Loss of a bailer and wire line has delayed the removal of nitro shot cavings from Magnolia Petroleum Company and Tex-Mex Petroleum Corporation's J. H. McKee 1-a, northern Pecos County Ordovician wildcat which was showing gas after 190-quart shot in Simpson at 5265-5300 feet. The hole was previously plugged back from sulphur water in the Ellenberger at 6262-67 feet to 6177 feet. A small oil producer in Simpson at 5274-89 feet was passed up to explore the Ellenberger. Stanley A. Thompson et al's Elsinore 1, southwestern Pecos County Ordovician prospect, succeeded in sidetracking tools lost at 7212 feet, and was drilling at 7225 feet.

Gulf Oil Corporation's McKnight 4, C NE SE PSL Section 3, Block B-21, 3¼ miles northeast of nearest Ordovician production in the Sand Hills field, Crane County, was coring lime at 6100 feet, with an elevation of 2701 feet. It has not entered the Ordovician, according to reports.

Three semi-wildcats are under way in northeastern Crane County on a trend between the Church & Fields and Gulf-Waddell areas. Magnolia Petroleum Company's University 1-15, SWc Section 15, Block 30, more than 1 mile southeast of the company's recent small wildcat completion, logged top of lime at 3075 feet, and was drilling at 3115 feet. It is checking flat with the producers. The Texas Company's University 1-G, NEc Section 7, more than 1 mile northwest of the pumper, was drilling at 1970 feet, with an elevation of 2642 feet. Gulf Oil Corporation's University-Lassiter 2-B, SWc Section 27, cemented surface pipe. The latter is an outpost for the Church & Fields area.

To Drill Deeper

Drilling was to be resumed late last week on S. H. Forgeron-Olson Drilling Company's Lockhart-Brown 1, C NE NE PSL Section 20, Block A-41, Andrews County wildcat, after failing to make a commercial well at 4584 feet. It is located 5 miles west of the Fuhrman field. A small amount of cut oil was recovered at intervals during the past month after nitro shot and multiple acid treatments.

Rhodes, Tompkins and Donnelly's E. Cowden-Sinco 1, 1 mile northeast extension to the Emma pool, southern Andrews County, gauged 65 barrels hourly for 5 hours on retest after being closed in for pipe line connection since July 6. Production is from lime at 4200-20 feet, and was stimulated by two-stage treatment with 6500 gallons of acid. Sinclair Prairie Oil Company, discoverer of the pool, has authorized an east offset. A narrow strip bordering the section that contains the new well on the north and east will result in the spread of development.

HARRY PENNINGTON, core barrel manufacturer and head of United States Heat Treating Company, San Antonio, has been dodging the heat with frequent trips to the Gulf Coast where he has a large boat. He reports fishing fine.

J. M. PRITCHARD, Montreal, and H. H. Bradburn, Winnipeg, vice presidents of McColl-Frontenac Oil Company, Ltd., and A. F. Campo, Montreal, general sales manager, were in Calgary, Alberta, last week. Pritchard announced preliminary plans for a 2000-barrel refinery in Alberta, to cost $1,000,000, and added that "we are planning entry into the Alberta oil fields and may get production ourselves to make the company self-sustaining."

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Texas permits total 290 during week

The Texas Railroad Commission last week approved permits for drilling 290 new wells in Texas, 171 more than were allowed the week before.

Permits were approved for drilling 62 new wells in the East Texas field, including 38 in Gregg, 17 in Rusk, 6 in Upshur, and 1 in Smith County; 19 locations were reported from the remainder of the East Central Texas area.

Operators in the Gulf Coast reported 60 new locations, including 12 in Nueces County. Southwest Texas operators listed 47, including 15 in Duval County.

Permits for drilling 31 new wells in West Texas were approved by the commission with 13 in Ector County, while 20 new locations were reported from West Central Texas.

The total of 42 permits approved in North Texas included 18 in Wichita and 13 in Jack County. Panhandle producers reported 9 new locations.

WEST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Means)—		
Humble, Means 46	2233	4535
Cochran County (Duggan)—		
Devonian et al, Duggan 1-C-8	278	5051
Crane County (Gulf-Waddell)—		
Gulf, M. Henderson 13	3344	3540
Crane County (Gulf-McElroy)—		
Gulf, McElroy 176	2259	2835
Crockett County (Wildcat)—		
Henderson et al, University-California Co. 1	*	1595
Ector County (Foster) —		
Arkansas F. O. Co., Johnson 3	708	4225
Sunray Oil Co.-York & Harper, Witcher 2	844	4250
Ector County (Goldsmith)—		
Gulf, Goldsmith 114	2360	4200
Goldsmith 115	1960	4180
Humble, Scharbauer 14-C	242	4225
Scharbauer 16-C	842	4198
Phillips-Pure, Cowden 30	530	4180
C. Cowden 31	1845	4165
T. P. Coal & Oil Co., Scharbauer 27	1320	4240
Ector County (Harper)—		
Blackstock Oil Co., T. P. Land Trust 1	2253	4187
Broderick & Calvert, T. P. Land Trust 4	3437	4163
Oil Well Drl. Co.-E. F. Cowden, Cowden 7-A	1412	4185
Shell, Cowden 13-B	946	4212
Texas Co., Parker 2-B	892	4225
Wentz et al, Parker 11-D	1579	4175
Ector County (Jordan)—		
Atlantic, University 3-B	1576	3645
Ector County (Wildcat)—		
Stogner, Casteel et al, Hendrick-Humble 1	*	4339
Howard County—		
Magnolia, Price-Scott 1	1296	2859
Jones County—		
Humble, Hollums 8	22	3278
Iron Mt. Oil Co.-Humble, Jones-Stasney 6	4800	3200
Kleiner et al, Carlson-Olson 1	*	3301
Sandy Ridge Oil Corp., Jones 2	94	1952
Pearson et al, Hood 1	*	2126
Snoddy-Dodson, Steffins 1	127	1910
Pecos County (Pecos Valley)—		
Whittaker et al, Eaton 1	*	1835
Pecos County (Yates)—		
Stanolind, Richardson-McMann 6	306	1369
Taylor County—		
Lewis Prod. Co., Henslee 1	*	2717
Upton County (McCamey)—		
Brown-Hancock-Hines Oil Corp., Baker-Conoco 4-D	237	2387
Gulf, Hughes 9-B	228	2200
Shirk 1-C	643	2750
Humble, Ricker 24-A	270	2140
Ward County—		
Gulf, Estes 99	684	2686
Hutchings 109	1110	2752
Lynch et al, Allen 1	232	2678
Winkler County (Kermit)—		
Magnolia, Walton 160	941	3250
Yoakum County (Bennett)—		
Magnolia, Bennett 2	1850	5251
Mid-Continent, Bennett 5	1934	5244
Yoakum County (Wasson)—		
Shell, Dowden 2	189	5065
Roberts 2	362	5090

*Failures; †Junked; ¶Million cu. ft. gas.

Jones County adds another oil field

Abilene, Texas.—Jones County has added a new oil pool on the strength of oil showings passed up by a wildcat three years ago. S. B. Roberts & Company's R. E. Pritchard 1, northwest corner of G. Martinez Survey No. 195, 1½ miles northeast of the Hawley field established the new area in swabbing five barrels of oil per hour for six hours from sand at 2072-80 feet and sandy-lime at 2080-83 feet. Location is 440 feet north of Moutray and Lonnie King's Pritchard 1, abandoned in July, 1935, at 2320 feet after passing up small free oil show at 2091-98 feet.

Stonewall County's first prospective oil producer, drilled by A. G. Swanson and F. B. Parrott on the H. T. Carlisle tract, SW SE SW H. & T. C. Section 293, Block D, 6½ miles north of Peacock, has lowered pipe for a production test in unidentified saturated lime at 5169-5172 feet. The well showed high-gravity oil through a column of water encountered in upper horizon. Top of Adams Branch lime was logged at 4700 feet.

Canada

[*Continued from page 231*]

Expect Completion Soon

On the Rogers-Imperial structure, east of Coutts, Range Oil & Gas Company Ltd.'s 1, Legal Subdivision 15, Section 20, Township 1, 11-w4, which resumed from 1765 feet two weeks ago, was drilling at 2190 feet. A gas sand is expected in another 400 feet. On Kootenay Dome, west of Calgary, Roxana Petroleums Ltd.'s 1, Legal Subdivision 5, Section 18, Township 24, 7-w5, made good progress during the week and at last report was at 3900 feet, including about 800 feet of Devonian limestone. The well may complete in another 700 feet. Additional gas was encountered last week.

In Turner Valley, two new tests started while four were deepened into the Madison limestone, producing horizon, last week. Anglo-Canadian Oil Company Ltd.'s 3 was spudded in on Legal Subdivision 10, Section 17, Township 18, 2-w5, a location that extends the drilling area to the southwest of present activity on the southwest flank. The company's Nos. 1 and 2 are drilling at 3437 and 3332 feet, respectively. Royalite Oil Company Ltd.'s 34 was started on Legal Subdivision 7, Section 5, Township 19, 2-w5, and at last report had surface casing cemented at 202 feet. It is northwest of the older producers in the southwest pool, an area that was condemned by failure of two tests to obtain production but that was recently brought back into favor with completion of Vulcan-Brown Petroleum Ltd.'s sizeable producer.

Four in Limestone

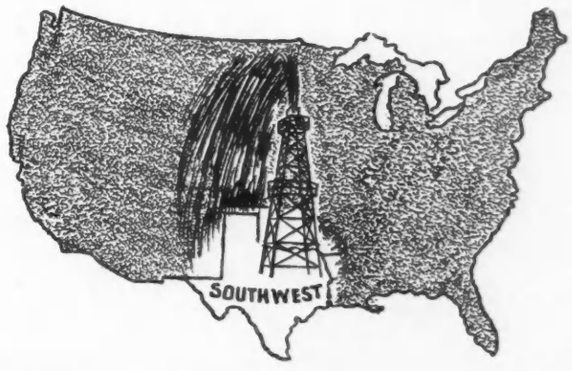
The Royalite company has two of the Turner Valley tests in the limestone: No. 31 on Legal Subdivision 6, Section 29, Township 18, 2-w5, topped the formation at 7590 feet and cemented casing at 7600 feet, and No. 32 on Legal Subdivision 8, Section 17, Township 18, 2-w5, had the Madison at 6800 feet and had casing cemented at 6808 feet. The remaining lime tests were deeper: Mercury Royalties Ltd.'s 1, Legal Subdivision 8, Section 5, Township 19, 2-w5, was drilling at 6405 feet, including 290 of Madison, and West Turner Petroleums Ltd.'s 2, Legal Subdivision 7, Section 32, Township 18, 2-w5, was drilling at 6810 feet. All four tests are in the proven area of the southwest flank and sizeable producers are expected.

Since penetrating the Home sand at about 9150 feet, Okalta Oil Company Ltd.'s 6, Leval Subdivision 3, Section 30, Township 18, 2-w5, western outpost to the southwest flank, has been encountering good oil and gas showings. It was drilling at 9300 feet last week, expecting the Madison limestone between 9400 and 9500 feet. The well is the deepest to be drilled in the British Empire.

Found to be very thin, the McDongall-Segur sands were not tested by Phillips Petroleums Ltd.'s 1, Legal Subdivision 16, Section 16, Township 20, 3-w5, and drilling was continued. In announcing a change in plans to test the formation, officials said a test may be made of the Home sand, expected shortly, if a similar oil showing is encountered. It is expected that the test, in the northwest part of the field, will be carried to the Madison despite results of the proposed test of the Home sand. Bottom was at 7070 feet last week.

W. C. FISHER, Calgary, was re-elected president and managing director of Model Oils, Ltd., Alberta producing Company, when shareholders held their annual meeting in Calgary last week. Other officers named were W. R. MacArthur, vice president; T. W. McKee, secretary-treasurer, and C. W. Barber, W. Grant MacKay and Harry Groves, directors.

OIL HELPS KEEP IT BRIGHT



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East Texas

New depth record for East Texas Border Counties

Shreveport. — Establishing a new depth record for East Texas Border Counties, The Texas Company's Claude Adams 1, Thomas Cox Survey, Bethany district, Panola County, Texas, last week reached its contract depth of 9000 feet, but continued drilling ahead in black shale at 9135 feet. Some showing of gas below the 9000-foot level has been reported. This test logged top of lower Marine at 7792 feet; elevation is 278 feet.

Four wells, two of them edge tests on the Lodi nose, were completed in the Jefferson, Marion County, Texas, end of Rodessa during the last week. Arkansas Fuel Oil Company's Johnson 1, Alexander Johnson Survey, with elevation of 217 feet, logged top of anhydrite stringer at 5256 feet, which is 24 feet higher on this marker than

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Humble, Silvey 23-A (142.85-ac)	7600	3777
Hunt Oil Co., Fair 41-C (211.4-ac)	8500	3605
Fair 8-D (55.78-ac)	8000	3653
Magnolia, Ashby 10 (41.37-ac)	480	3700
A. T. Tyiska 11 (87.31-ac)	2400	3818
McMahon et al, Cook 9 (39.7-ac)	2000	3731
Ohio, Burton Bros. 31 (254.44-ac)	3500	3704
Griffin 18 (65.61-ac)	750	3702
Vaughn et al, Alford 11 (79-ac)	900	3836
Kilgore Area—		
Alsobrook & Nathan, Miller-Stanolind 1 (37.49-ac)	400	3595
Donnell, Tr., Everett-Crews 5-B (50-ac)	1200	3838
Geier Bros., Florence 3 (145-ac)	*	3700
Jenkins et al, Crane 4 (1.44-ac)	2600	3548
Magnolia, Goyne 5 (24.95-ac)	8000	3612
Still 19 (105.83-ac)	7300	3715
Potter Bros. Prod. Co., Dixie Mercantile 1-B, blk 121	2500	3570
Shell, Bivens 15-B (90.67-ac)	5500	3695
Elder 45 (196.05-ac)	8800	3631
Register 11 (47.87-ac)	5300	3693
Smith-Bohlssen Co., Terrell 9 (67½-ac)	1500	3636
Stanolind-Noble, King 9 (50-ac)	7000	3778
Westgate-Greenland Oil Co., Cole-State 5 (10.94-ac)	7200	3461
Longview Area—		
Arkansas F. O. Co., McKinley Bros. 20-A (96.74-ac)	6400	3577
Dean Bros., Phillips 2 (113-ac)	160	3654
Deep Rock Oil Corp., Pritchard 7 (40-ac)	8800	3530
Elm Oil Co., Walker 5 (28.83-ac)	5000	3654
Gen'l American Oil Co., Adams 24 (102.65-ac)	8500	3599
Humble, Holland 36 (201.63-ac)	8800	3686
Joe Long-Cushing Drl. Co., Owens 34-A (208-ac)	1500	3621
Magnolia, Castleberry 9 (40-ac)	6500	3615
Phillips-Sanders, Sanders 1 (2.67-ac)	5000	3602
Stanolind-Tide Water, LeMaire 9 (38.76-ac)	8600	3639
Anderson County (Long Lake)—		
F. H. E. Oil Co. et al, J. H. Morrow 4-A (50-ac)	300	5344
Tide Water Associated-Seaboard, Shaw-Cern 9	500	5341
Henderson County (Flag Lake)—		
Peyton Bros., R. L. Tarkington-Shell 1 (50-ac)	*	3699
Houston County (Navarro Crossing)—		
Humble, Dailey-Taylor 1	¶24.1	5894
Angelina County—		
K. L. McHenry & E. L. Kurth, L. Henderson 1	*	6501
Marion County (Rodessa)—		
Arkansas Fuel Oil Co., Belcher 1, A. D. S. Coy sur	173	6112
Holcomb & Thomason, Bohn 1, A. D. S. Coy sur	237	6061
Phillips, Jackson 1, Jno. Hanks sur.	2222	6170
Shell, Schluter 4, S. Smith sur	480	6054

*Failures; †Junked; ¶Million cu. ft. gas.

in the same company's Pitts 1, 1½ miles northeast, that was a wet gasser in the Hill horizon. Pitts 1 was over 2 miles southwest of production at Jefferson.

Mills Bennett Production Company, Sivosa Oil Company, and M. C. Lucky, all of Houston, Texas, have been taking leases recently near Jonesville, Harrison County, Texas, in the E. Carter, G. Anderson and adjacent surveys.

Redditt and Gray were preparing to drill plug and test Pickering Lumber Company A-1, P. J. Loggins Survey, Harrison County, having set 7-inch casing at 2920 feet; total depth is 4220 feet.

Kilgore, Texas. — Majority of the producing wells in the Talco and Sulphur Bluff fields, only Paluxy zone areas in Texas, are making salt water, according to mid-year survey made by the railroad commission. All wells at Talco are on pump or air/gas lift and 430 of the 650 tested wells are averaging 19,789 barrels of water daily. The base crude allowable per well is 63 barrels daily. Sulphur Bluff field has 73 wells including 53 pumpers and 44 wells are producing an average of 1722 barrels of salt water daily. The base crude allowable is 87 barrels daily per well.

Fitzsimmons hearing on spacing held

Twenty-acre spacing for wells in the new Fitzsimmons field, Duval County, was urged at a hearing before the Texas Railroad Commission last week. This plan was advocated by the Sun and Amerada companies. They suggested that only one well be allowed on each 20-acre unit, but that this well be spaced according to the 10-acre ruling, that is, not closer than 330 feet from lease lines and 660 feet from the nearest well.

A group headed by the Houston Oil Company asked the commission to provide 10-acre spacing, pointing out that the field was narrow and that 1 well to 10 acres would probably be drilled before the field is fully developed.

Geologists reported that the field is very irregular. The two groups disagreed on the method allocation. Sun and Amerada asked for proration on acreage and per well with 50 percent allocated on each factor. The independent group sought straight per well allowables.

The field is now producing from the Chernosky sand at about 3600 feet sand and from the Pettus sand at approximately 4000 feet. Four hundred feet of surface casing was recommended for wells producing from both sands, and operators recommended that wells completed in the Pettus sand should be cemented to a point about 300 feet above the Chernosky sand.

A maximum gas-oil ration of 2000/1 was recommended.

The wells in the field are now producing 27 gravity oil from the Chernosky sand and 47 gravity oil from the Pettus sand.

Shreveport — Twenty-nine drilling permits were authorized last week by the Louisiana Conservation Commission of which 21 were for North Louisiana divided among the following parishes: Bossier, 2; Caddo, 3; Claiborne, 3 (all in Lisbon); LaSalle, 1; Lincoln, 2 (Lisbon); Morehouse 2; Red River, 1; Sabine, 4; Union, 1, and Webster (Cotton Valley), 2. The 8 in South Louisiana were in the following parishes: Acadia, 1; Ascension, 1; Cameron, 2; East Baton Rouge, 1; Jefferson Davis, 1; La Fourche, 1; St. Mary, 1.

El Dorado, Ark.—Six permits to drill were authorized last week by the Arkansas Board of Conservation, as follows: Columbia County—Petroleum Finance Corporation of Texas, domiciled at Dallas, Alice Baker 1, C SW NW 13-17-20; Barnett 1, C NW SE 14-17-20; Union County—Crescent Drilling Company, Lena Lewis 1, 330 feet north and east SWc SE SW 16-18-17; Marine Oil Company, Calloway 2, 330 south and east NWc east half SE NE 13-18-18; Root Petroleum Company, F. F. Justiss 1, 330 feet north and east SWc SW NE 7-18-17; and Lion Oil Refining Company, Sewell 1, 330 feet south and west NEc Lot 4, NW 18-18-17.

Texas alters tank bottom test rule

Revision of the regulation governing tank bottom tests in the East Texas field is provided in an order issued by the Railroad Commission last week.

The new order revises Section "C" of Rule 1 and provides that the A.P.I. test may be used in determining the paraffin content of tank bottoms, but heating the material tested is forbidden. The new rule reads as follows:

"Rule 1, Section "C"—The determination ofthe merchantable crude oil contained in the tank bottom shall be made by an agent of the commission and shall be according to the standard centrifugal test as prescribed by the American Petroleum Institute's code for measuring, sampling and testing crude oil, number 25, Section 5, except that no heat shall be applied to the sample to be tested before centrifuging. The merchantable oil so determined shall be charged back as enumerated in Sec. "(D)" of Rule 1."

Pipe line sold

Sale of the Panhandle Illinois Pipe Line Company to the Panhandle Eastern Pipeline Company for $5,000,000 accounted for the largest deed and bill of sale ever filed in Douglas County, Illinois, County Recorder Everett McCumber announced at Tusola. The bill filled 79 closely printed pages.

New Illinois maps

Urbana, Illinois.—M. M. Leighton, chief of the Illinois state geological survey division, announced last week that new sectional maps of all active oil areas in the Basin will be issued by the department. They will be drawn on a basis of two inches to the mile, and it will be possible to join sections in a master map of the active sections.

The booming Centralia area will be subject to the first map of the series.

R. J. McFARLAND is president of Algoma Oil Company, Peoria, which was granted a charter by the Illinois secretary of state last week. Other officers of the firm, which is capitalized at $1,000,000, are Clinton E. Crosby, vice president, and J. Q. Gill, secretary and treasurer, both of whom have been active in oil development in the Centralia field.

Southwest Texas Fields

Expect new Refugio County field on production soon. Grimes fighting burning, cratering well at Midway. Stanolind to test new North Placedo sand again.

Corpus Christi. — Refugio County's newest oil field, first to be opened in this county in several years, was expected to be on production over the week-end. I. J. Allen's Mrs. B. D. Rooke 2, on the Woodsboro prospect, drilled to 6875 feet, plugged back, set casing at 5480 feet, and was perforating in sand topped 5382 feet. It had a series of sand and shale streaks from that level to 5437 feet, all showing oil and gas. Then it went into salt water.

The test is located 3300 feet due west of the southwest corner of Section 46, Bonnie View Subdivision, and is the second test on Allen's solid block of 3660 acres.

In the Midway pool, San Patricio County, Harlan Grimes was fighting a cratering, burning oil well. D. I. Coggin 2, Section 82, drilled to 5347 feet, 36 feet in sand, and was completed through perforations at 5340½-44½ feet. Casing apparently began to leak and the well went out of control, subsequently catching afire.

Stanolind Oil & Gas Company was attempting to open a new oil sand in the Northeast Placedo field of Victoria County with Vandeberge & Hill 2, which drilled to 6381 feet and plugged back to 5412 feet. Perforations were made at 5330-32 feet, the well flowing considerable salt water, gas and distillate. Perforations were squeezed and the well will be tested again.

Magnolia Petroleum Company has staked a third location on its large West Ranch block in Jackson County and will drill a test to 7000 feet or deeper. This area, south of Vanderbilt showed producing possibilities in its two previous operations.

Alice Extended

Mills Bennett Production Corporation's Perkins 1, 2½ miles northeast of the Alice field, Jim Wells County, was holding attention late in the week, progressing below 3400 feet in sidetracked hole. It had drilled to 5658 feet, but was redrilling several sands which showed producing possibilities on electric formation survey.

Alice was given an extension of more than ½ mile southwest when W. G. Coates' Stillwell 1, NE S½ Block 16, completed through perforations 5238-48 feet, flowing 240 barrels of oil in 20 hours through 3/16-inch choke. Pressures were 890 pounds on tubing and 1150 pounds on casing. The well had the sand 5236-60 feet and was drilled to 5303 feet, where casing was set. This is the first completion in the Collins Farm Lots Subdivision southwest of the field, thus paving the way for increased development.

Pan American Production Corporation et al's Cook 1, 4500 feet east of production, flowed 20 barrels of distillate and approximately 2,500,000 cubic feet of gas in 24 hours through 12/64-inch bottom and 3/16-inch top chokes to extend the Frio sand production and the field. The pressures were 2200 pounds on tubing and 2300 pounds on casing. The well had sand from 5132-82 feet, with the only shale break at 5361-66 feet. It was carried to 5500 feet and completed through perforations at 5176-83 feet.

In the southwestern portion of Jim Wells County, Magnolia Petroleum Company's Valadez Heirs 1, Share 5-B, La Anima Sola Grant, was reported running a protection string of casing to 6390 feet. It blew out at that level, stuck drill stem, and the test had been tied up with a fishing job until late in the week.

East Premont Extended

Magnolia Petroleum Company et al's Seeligson 9, 1320 feet north of the East Premont field, Jim Wells County, was completing after recovering 1100 feet of oil, 85 feet of salt water and 185 pounds working pressure on 16 minute drill stem test through perforations at 6579-81 feet. The well flowed oil at the end of the test.

Transwestern Oil Corporation was building derrick for a test to this sand in the B. H. Dunlap tract, Surveys 179-181, about 1½ southwest of East Premont field.

Planning to drill to at least 10,000 feet, Pure and Superior Oil Companies are drilling plugs in State of Texas 1, Kleberg County, after setting a string of 9⅝-inch casing for protection at 7617 feet. The well is in Submerged Tract No. 522, in Laguna Madre and North Bird Islands.

Union Producing Company has conditioned mud with sodium silicate and other chemicals and was attempting to drill ahead through heaving shale in Minnie Brown 1, in the Agua Dulce area, Nueces County. The well is in the Hockleyensis zone at 9615 feet.

Test near Killam-Oilton enhances area's outlook

Laredo. — Killam-Oilton sector of southeastern Webb County, gained a new perspective as continued tests in W. F. Houser's Garcia & Villareal 1, east corner Section 720, increased its gas flow to about 15,000,000 cubic feet and sprayed some 45-46 gravity crude from a sand apparently in the Cockfield. The test has a working pressure of about 800 pounds on ¾-inch choke, and when closed in it builds up to 1100 pounds. When the well is blown to allow the pressure to go below 500 pounds, it starts flowing considerable oil. It has been shut in to prevent gas wastage.

The test, located about 3 miles north of the Oilton pool and 1 mile northwest of the Killam field, cored sand 2492-97 feet, shale break to 2501 feet, then continuous sand to 2524 feet. Casing was landed on bottom and perforated at 2494-98 feet. This sand corresponds closely in the section to the Rosenberg, producing to the southwest, or the O'Hern sand, producing to the southeast in pools bearing their respective names. Both are in the Cockfield section.

Suggests Anticline

This well is looked upon with considerable concern as it suggests an anticlinal structure running north through the Oilton townsite and in-

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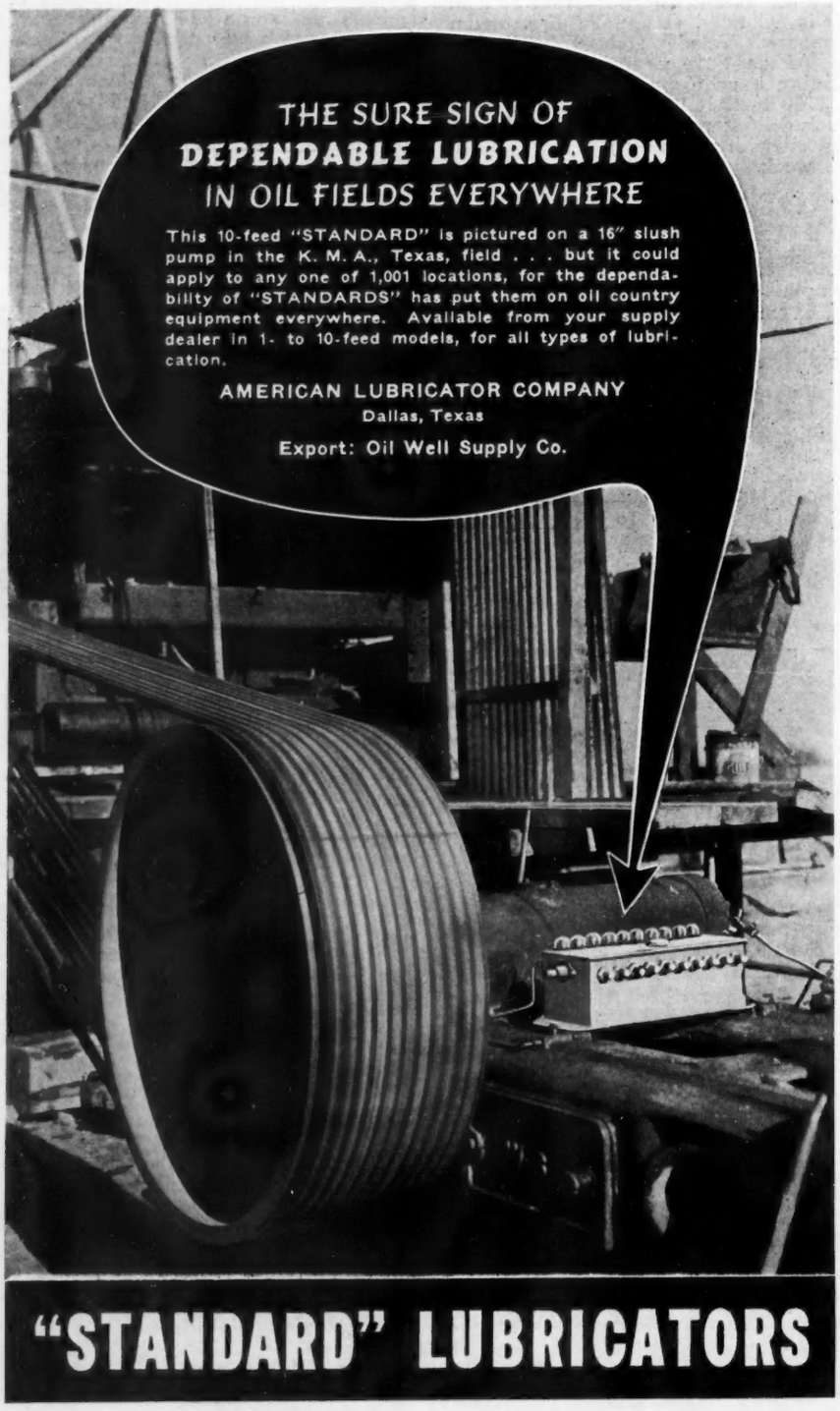
cluding a Rosenberg or O'Hern sand producer completed early in the year by Moore and Meaders on the Garcia & Villareal land. This well is 2 miles south of the new discovery. This may mean that the lensing productive in the Killam and Oilton fields flanks the zone productive in the deeper sand. These areas are producing at 1900-2000 feet in the Mirando sand, which showed gas in the Houser test.

Two Outposts Disappoint

Duval County had a couple of disappointments in outpost wells. Crighton & Moore's Martin 1, one location northwest of production in the new Casa Blanca field, is shut down for orders in salt water sand at 1203 feet. It may be deepened. Richardson and Walker's Mew Estate 1, NE NW SE Section 287, ¼-mile southwest of the new Fitzsimmons pool and first outpost to the area, tested salt water in the Pettus zone at 4297-4303 feet and has been abandoned. The Hockleyensis sand at 3555-66 feet carried a little oil, but not sufficient to make a producer. H. J. Porter's Fitzsimmons 2-A, attempting to open this shallower sand as a twin to the deeper production, is still having trouble with a squeeze job. The well is making oil, gas and water. Sun Oil Company squeezed off part of the perforations in Fitzsimmons 1, offset to the discovery and is now completing as an oil producer in the 4300-foot Pettus sand.

Arkansas Fuel Oil Company may be opening a new sand in the Tesoro pool of Duval County. Cuellar Brothers 2, 4000 feet southwest of the discovery, drilled to 5541 feet, finding salt water in the Pettus and Yegua sands, after which it plugged back and is preparing to complete in a sand at 2780-85 feet, indicated by an electric logging survey. Casing was cemented at 2872 feet.

Hiawatha Oil & Gas Company materially brightened the appearance of the South Sweden field of Duval County when it found one of the sands in the Govern-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Company, Well and Location	Init. Prod. Bbls.	Depth
CORPUS CHRISTI DISTRICT		
Bee County—		
Dirks Bros., Robertson 1, A. J. Davis sur	•	4310
W. G. Turbeville, Smith 1-A (Plummer)	•	3992
Goliad County—		
Bunte Prod. Co., S. E. Crews 1, Maria Jesusa de Leon sur	•	5710
Jim Wells County—		
Coates et al, Stillwell 1, Spring Creek Irrigation Co. sur, (Alice)	750	5203
Pan American et al, Cook 1 (Alice)	¶2½ & 20	5500
Live Oak County—		
Lomak Oil Co., Reed 1, I&GN sur 15	•	4500
Simmons Oil Co., Reagan 1-C, (Oakville)	•	2800
Nueces County—		
Heep-Refugio Oil Corp., Rogers 1 (S. Clara Driscoll)	700	5334
Pan-Amer. Sagarino 4-A (Saxet)	750	7400
Phillips, Pope 1 (Turkey Creek)	450	5812
Smith 2 (Turkey Creek)	400	5817
Renwar Oil Corp., Harrington 14 (Turkey Creek)	150	5620
Seaboard, Luby 31 (Luby)	500	4375
Sultex Oil Co., Taggert 3-A (Saxet)	•	6860
Refugio County—		
Copano Oil Co., O'Connor 3 (Tomoconnor)	1500	5925
O'Connor 5 (Tomoconnor)	1500	5915
O'Connor 8 (Tomoconnor)	1750	5915
Quintana Pet. Corp., O'Connor 30-C (Tomoconnor)	1650	5930
Union, Lambert 74 (Tomoconnor)	•	6205
San Patricio County—		
Baltic Drl. Co. et al, McNulty 2 (McCampbell)	1100	7130
Conservative Oil C., Floerke 1 (Midway)	550	5348
Harlan Grimes, Coggin 2 (Midway)	800	5347
Plymouth, Owen 2 (East White Point)	600	5667
Teeter 1 (East White Point)	600	5658
Texas Co., Brigham 1 (East White Point)	600	5666
Victoria County—		
Gulf, Traylor 6-B (Heyser)	350	5746
LAREDO DISTRICT		
Duval County—		
Hiawatha O. & G. Co., Southland 9 (North Sweden)	¶3 & 20	5525
Magnolia, Weil 7 (Hoffman)	240	2800
W. A. Richardson & Marvin Walker, Mew 1 (Fitzsimmons)	•	4303
Schimmel et al, Murphy 1, BS&F 110	•	2936
McMullen County—		
Harold Boysen & Byron Jones, Nueces Land 3, Williams sur	•	1000
Bridwell Oil Co., Nueces Land 1, sur 489	•	1711
W. A. Wagner, Hagist 1, R. W. Mills sur	•	3000
Starr County—		
Henshaw Bros. & Eastern Oil Co., Rodriguez 1, por 88 J. of Camargo (Barbacoas)	•	2771
Webb County—		
Cole Pet. Co., Benavides 104 (Cole)	¶5	2274
Houser et al, Garcia-Villarreal 1	¶15 & 5	2624
Zapata County—		
Kleiner & Hill, Gutierrez 14-E (Escobas)	10	1253
Nash Tr., Haynes 30 (Comitas)	25	1154
SAN ANTONIO DISTRICT		
Caldwell County—		
Ogden et al, Vickery 6 (West Dale)	•	2699
Taylor Ref. Co., Dorn 7 (Luling)	80	2100
Wiegand Bros., Briscoe 1 (Salt Flats)	•	2735
F. W. Shield, Walker 2 (Walnut Creek)	65	1628
Kimble County—		
Plateau Oil Co., Anderson 1, J. Dufner sur	20	1869
Milam County—		
Fritz Fuchs, Stork 1, Maria J. Delgado sur	1	1390
Morgan et al, Johnson 1, J. J. Acosta sur	•	1980

•Failures; †Junked; ¶Million cu. ft. gas.

ment Wells Group showing oil on a drill stem test. Miller 5, NE Section 23, and ¾ mile west of production, cored the sand 4909-12 feet and on a drill stem test at 4898-4917 feet recovered 390 feet of pipe line oil and 50 pounds working pressure in 20 minutes. The test is going ahead to the 5800-foot sand, and if unproductive, will plug back to the upper level. This sand may correspond with the Woodley-Parr or Gravis zone, productive in the field to the north. In the early days of the south field, this company completed Southland 2 in sand 5100-16 feet as a gasser and Herberger 2 in sand 5072-97 feet as a small pumper. These sands also correspond to the Government Wells group. As a result, it is not definitely known whether this is a new sand or an extension to the field. In either event, its discovery is of high importance to this producing area.

Ellenberger importance at Junction to be known soon

San Antonio.—True importance of the Junction Ellenberger prospect in Kimble County should be known soon with one new well drilling and two more locations staked. Plateau Oil Company's Anderson 1, Section 43, continues to test, pumping about 80 barrels of fluid, 20 barrels being 28.3 gravity crude and the remainder salt water. The well is in the Ellenberger at 1819-65 feet with the last 5 feet saturated. Elevation is 1782 feet derrick floor.

The new location's staked by Plateau concern include Mrs. E. E. Bolt 1, 427-acre tract in the S. Jones Survey 42, and Mrs. T. Hunger 1, 19-acre lease in Survey 43. Phillips Petroleum Company is near 1000 feet in A. L. Budge 1, Section 9.

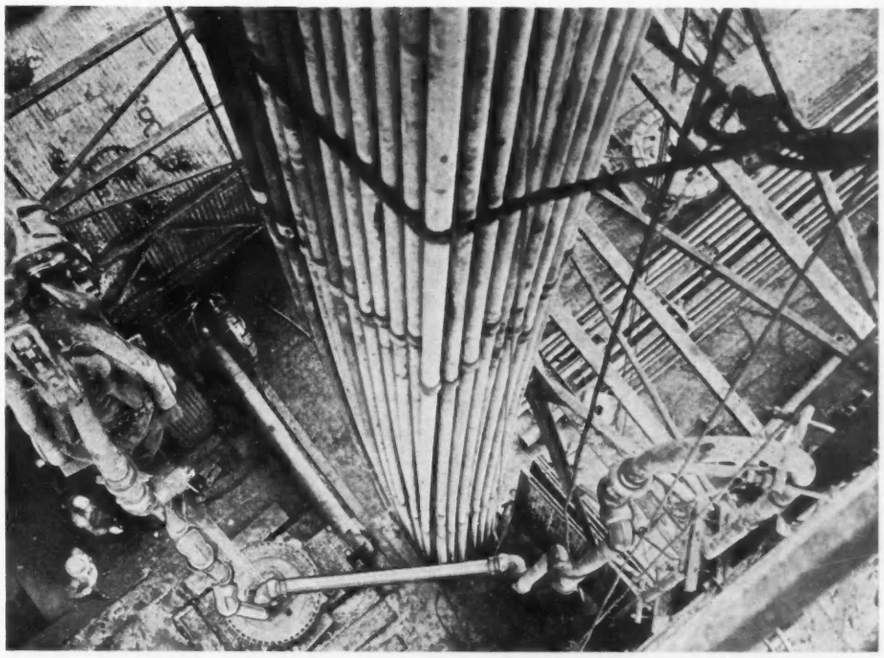
This new strike is significant as it is the first Ellenberger production developed in the Hill Country or lower Edwards Plateau. There are a number of rather large surface structures in this area, and sustained production in this formation would be an incentive for drilling.

Chittim anticline getting extensive exploration

San Antonio.—Chittim anticline, extending from the southern portion of Val Verde County, southeast through Dimmitt County, comes for an extensive and expensive exploratory campaign. Six Cretaceous tests are immediately planned or are underway on this anticline, with their outcomes expected to bring further development.

Wellington Oil Company of Delaware, having completed 2 gas and distillate producers on a large Chittim estate block in Maverick County, is commencing another 5800-foot Glen Rose test. This company has a plan of continuous development of properties. The new test will be in the northeast portion of Section 98, south of the other wells drilled in the area. The concern recently made a deal with Humble Oil & Refining Company for a portion of the latter's block, the deal involving drilling.

L. M. Lockhart et al have commenced the first of two Glen Rose tests on a block of slightly more than 11,000 acres in northwestern Maverick County and Southern Kinney County. Rio Development Company is credited with having staked a location in the



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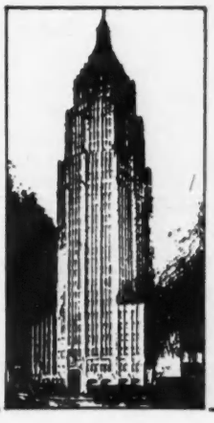

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southern portion of Section 46, near Eagle Pass, Maverick County, the test projected to the Glen Rose formation. Rumors were current late in the week that another transaction had been completed whereby an additional Glen Rose test would be sunk in this general area.

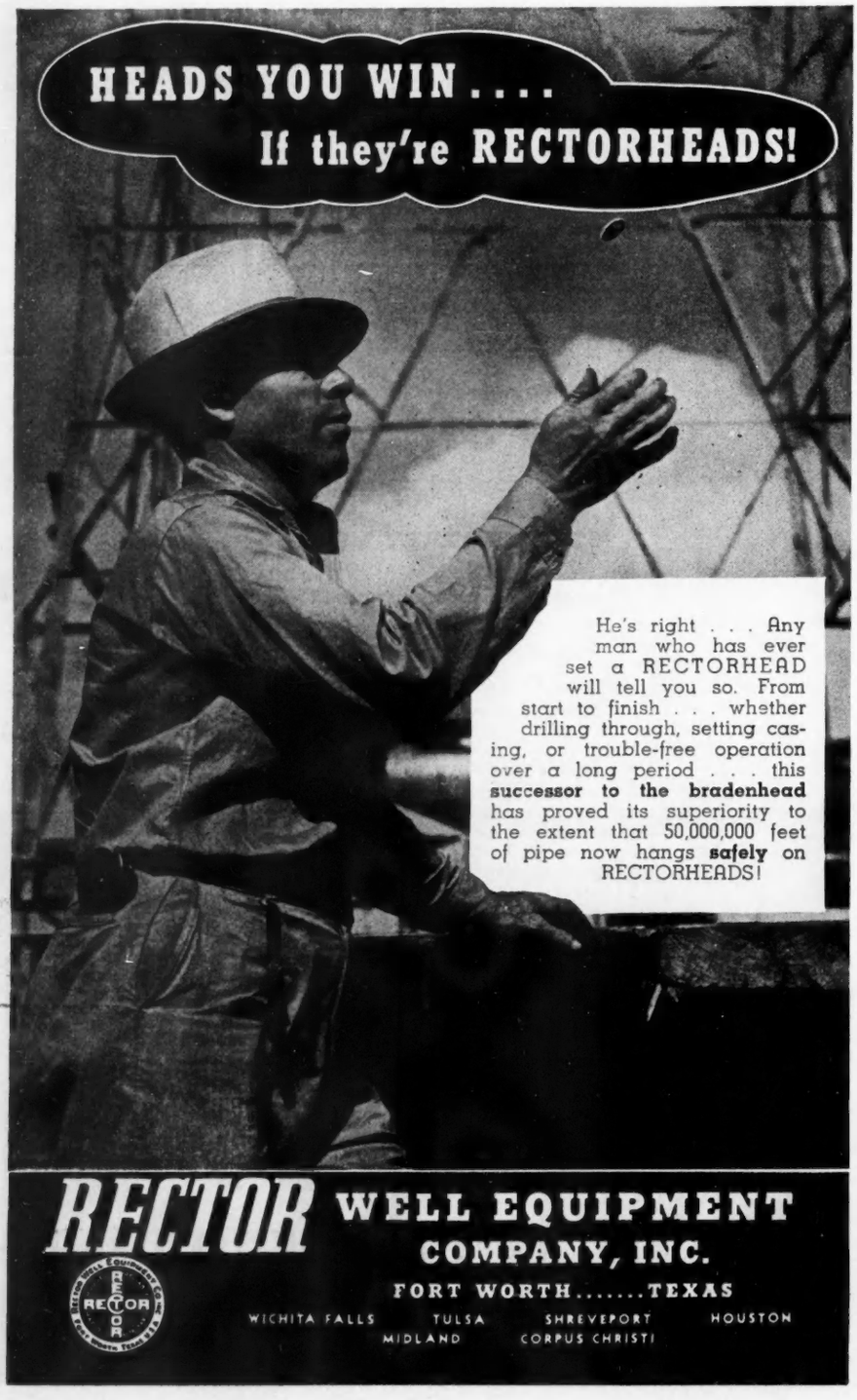
Maryland Corporation, associated with Paul C. Teas, drilled a 7000-foot Edwards limestone test on the Carrizo Springs prospect, Dimmitt County, and is planning another well in the general area, it is reported. Southeast and near the Dimmitt-LaSalle County line, south of Cotulla, Trinity Petroleum Corporation has a tentative location for a deep test.

This trend is looked upon as being one of the outstanding potential major reserves of South Texas. While only production has been gas or small oil producers, the trend is expected to ultimately develop into a large oil producer. Exploratory costs are high, however, ranging upward of $4.00 per foot for drilling alone. This has been a hindrance to development. A completed wildcat, including coring, testing and equipping involves nearly $250,000.

Preparations were being made to abandon Thomson and Thomson's S. A. Joint Stock Land Bank Company 1, on Humble Oil & Refining Company's prospect northeast of Pearsall, Frio County. The well showed fresh water through perforations in Taylor marl at 3725-32 feet and sulphur water in the Edwards limestone at 5632-86 feet.

Drill pipe again twisted off in Mason Altgelt's Venegas 1 on the Anchorage Serpentine prospect in Atascosa County. It is to be completed at 2796 feet as soon as the hole is cleared.

Ball and Dubose's Miller 1, shallow Taylor marl operation in the southern portion of Bexar County, is good for about 5 barrels of 32 gravity crude per day to open a new pool. It is producing from sandy lime at 1765-72 feet.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La Reforma well makes 100 barrels distillate

Mission.—Wheelock & Collins et al's deep test in northeastern Starr County Friday was completed making 100 barrels of distillate from the Frio. The test had been drilled to 7010 feet, tested salt water in several Vicksburg sands below 6000 feet, then perforated at 5927-30 feet, where a drill stem test recovered 650 pounds pressure in 6 minutes. Another set of perforations was made at 5922-24 feet, but an unsatisfactory recovery was obtained. Sand logged at 5917-69 feet showed for a heavy gas producer.

The well, F. B. Guerra 1-A, is the third deep test to be drilled on La Reforma prospect. The first showed considerable oil, but went to salt water in the Vicksburg. The second blew out just below 6600 feet, ran wild and sprayed considerable oil with a large amount of gas.

Running High

Phillips Petroleum Company is making slow progress in Flores 1, deep test north of the Samfordyce field in Hidalgo County. It is going ahead at 5830 feet, but likely will set a protection string of casing to prevent shale from heaving or caving into the hole. The test is in the Hockleyensis at this level and is logging much higher than any previously drilled operation in the area.

An attempt to tie the Barbacoas and North Barbacoas fields together failed when Henshaw Brothers and Eastern Oil Company abandoned Stalley 1, Share 35, Porcion 88, at 2771 feet in salt water sand topped at 2740 feet. It is about midway between the two areas.

Union Sulphur Company was drilling ahead after setting 8417 feet of 7-inch casing as protection in American Rio Grande Land & Irrigation Company 1, projected Vicksburg sand test in the Mercedes field, Hidalgo County.

Put off Cotton Valley hearing

Shreveport, La.—A meeting of the Cotton Valley Operators Committee to be held in Shreveport has been postponed from July 26 to July 29, at which time recommendations for spacing rules, allowables, etc., for the new lower Marine oil producing horizon at Cotton Valley made to Louisiana Conservation Commissioner William G. Rankin will be determined. The meeting was deferred to July 29 to complete some bottom-hole pressure and production tests being made on the discovery oil well of the field in the lower Marine. Two oil wells are producing from that horizon both on the south flank of Cotton Valley, whose lower Marine production had hitherto been confined to gas and distillate. The lower Marine has been classed as a gas field and allocations made on that basis.

Texas Gulf Coast

Fairbanks outpost may produce from deeper sand. West completes first oil well in Clear Lake field.

Houston.—Fairbanks, Harris County, continues to be one of the most active fields in the Texas Gulf Coast. A northeast outpost test was attracting attention during the past week as it may produce oil from sands several hundred feet below the established Fairbanks producing horizon. Union Producing Company Goodykoontz 1, W. S. Powell Survey, was waiting on cement to set at 7225 feet after a production test showed oil and salt water. Another test will be made this week at a higher level. Last week the well was perforated with 15 shots from 7222 to 7225 feet and it came in flowing 12 barrels of fluid per hour, 10 percent oil and 90 percent salt water, through a ¼-inch choke. Tubing pressure was 375 pounds and casing pressure was 650 pounds.

Fairbanks will probably have 7 new oil producers next week. All the wells are down to the sand and are either making production tests or waiting on cement to set for the tests. Amerada Petroleum Corporation's Couget 2 topped the sand at 6823 feet and has 5½-inch casing set at 6854 feet; same operator's Post 1, was drilled to 6858 feet in sand showing oil after topping it at 6830 feet and setting 5½-inch casing at 6856 feet; same operator's Smith 2 was waiting on cement at 6849 feet in sand showing oil; Gem Oil Company's Reid 2 perforated from 6851 to 6855 feet with 12 shots and flowed 171 barrels in 6 hours; H. B. Owenby's Stephens 1 is preparing to set casing after topping sand showing oil at 6832 feet; Showers & Moncrief's Ley 2 is flowing into burning pits at 6845 feet, and Skelly Oil Company's Emmott 1 topped sand showing oil at 6814 feet and set 5½-inch casing at 6843 feet.

31 Gravity Oil at Clear Lake

A potential test was made last week on West Production Company's Fee 1, 2000 feet south of the discovery gas well at Clear Lake, Wm. Dobie Survey, Harris County, and it showed 355 barrels of 31 gravity oil in 24 hours through a ¼-inch choke from 6015 feet. This is the first oil well to be completed in the area.

One mile west of production at South Houston, Harris County, Commerce Oil Company's Meadowbrook Development Company 1, J. R. Harris Survey, was drilling in shale at 5809 feet last week after coring salt water sands from 5658 to 5690 feet. The well is being drilled to 9000 feet or deeper.

On the north flank of Orange and 400 feet northeast of Union Producing Company's Lutcher Moore 2, which discovered a new sand some time ago, General Oil Company completed State 1 at 6035 feet. It flowed 10 barrels of 40.3 gravity oil per hour through a ¼-inch choke. Tubing pressure was 1810 pounds and casing pressure was 1900 pounds. State 1 was perforated from 5990 to 6018 feet with 80 shots.

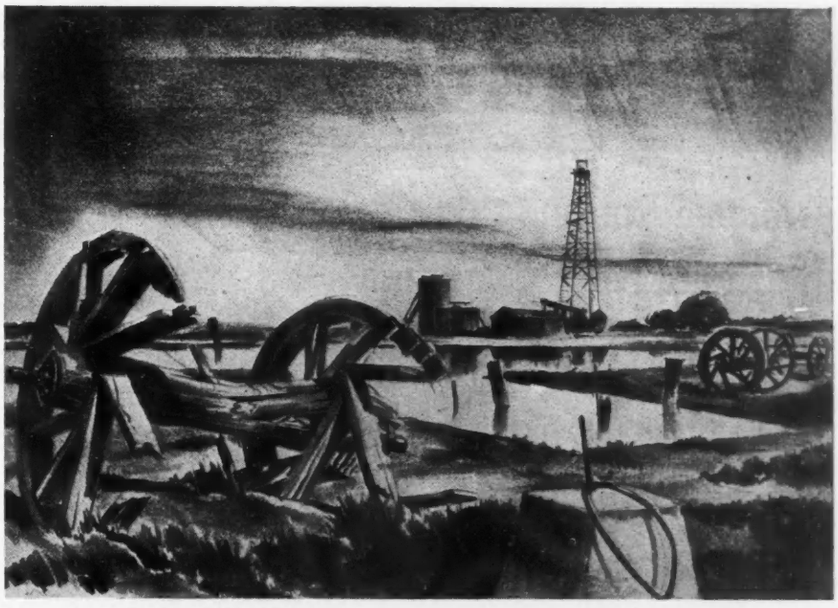
State 1 also cored a Miocene oil sand at 4094 to 4121 feet which showed 25 gravity oil. This sand will be tested in the future.

On the northeast side of Silsbee field, Hardin County, Republic Production Company completed Winters 1 flowing 270 barrels of pipe line oil daily from sand showing oil from 6914 to 6918 feet.

Gets Only Mud

On the southeast flank of Anahuac, Chambers County, Humble Oil & Refining Company abandoned Broussard Hebert 9, H. & T. C. Section 63 at 7100 feet. A drill stem test at 7077 to 7100 feet showed only mud.

At Cedar Point in Galveston Bay, Chambers County, Salt Dome Oil Corporation and Standard Oil Company of Texas' State 1-94 was drilling in shale at 6450 feet, below the producing horizon. Salt water sands were cored from 6059 to 6064 feet. After drilling to 6500 feet the well will probably be



From a lithograph by E. M. Schiwetz

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plugged back to test sand showing oil from 4420 to 4440 feet, a new sand for the field.

E. R. Kirkpatrick's Foster Lumber Company 1, Conroe wildcat, T. & N. O. Survey, Montgomery County, was abandoned last week at 5819 feet after coring salt water sands at 5778 to 5803 feet.

On the flank of Sugarland, Ft. Bend County, Strake Petroleum Corporation abandoned another test during the past week. Dew 1 was dry at 7511 feet. Salt Water sands were logged up the hole.

Sam E. Wilson was coring in Wood 1, Fresno wildcat, C. Heywood Survey, Ft. Bend County, at 5689 feet. Salt water sands were cored at 4773 to 4778 feet, 4812 to 4827 feet, 4923 to 4927 feet and from 5045 to 5081 feet.

In the Legrande-Magnolia Springs area, Jasper County, J. G. Mayo et al's Cartwright 1, Legrande Survey, was coring shale at 7500 feet at the end of the week. Salt water sands were logged in this wildcat from 7306 to 7316 feet.

The second well at Cheek, Shell Petroleum Corporation's Ed. Pleasant 1, C. Hillebrand Survey, was nearing the producing sand discovered by Glenn H. McCarthy at the first of the year. The hole is down to 6800 feet in shale. The well logged salt water sands from 6514 to 6519 feet and from 6527 to 6532 feet.

Shell Petroleum Corporation's second well at Clam Lake, McFaddin 2, Jefferson County, tried to blow out last week at 5548 feet after casing was perforated with 48 shots from 5534 to 5548 feet. The well started flowing and pressures went up to 700 pounds. It was killed and screen is being set.

South of production at Hankamer, Liberty County, Hankamer Oil Company's Stengler 2, G. Stengler Survey, was coring in sand at 2863 feet after logging sands from 2826 to 2831 feet which showed 5½ ohms on an electrical logging device.

Another oil well is being completed at McCroskey field, Matagorda County, by Pierce Estate. Fee 4 was flowing 103 barrels in 12 hours through a ¼-inch choke from 6626 feet. Casing pressure was 1000 pounds. Fee 4 topped the broken sand showing oil at 6589 feet and solid sand at 6615-feet; 5½-inch casing was set at 6621 feet.

The deepest well ever drilled along the Conroe trend is Stanolind Oil & Gas Company's Freeman 1, H. & T. C. Survey, Section 99, Katy gas field, Waller County. At the end of the week the well was at 11,000 feet and is drilling below the Wilcox formation. It was reported that the top of the formation was logged at 10,025 feet.

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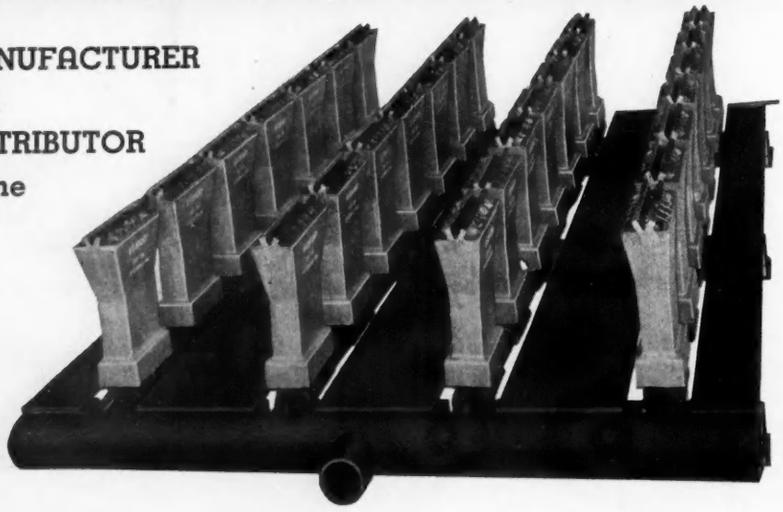

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TEXAS GULF COAST Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Humble, Broussard Hebert 9	*	7100
Wilcox 6	624	7060
Batson—		
Atlantic, Cruse 1	362	5843
Boling—		
Mackhank, Farmer A-4	*	4536
Farmer B-3 (wo) dr to 5035 pb and comp	395	4625
Clear Lake—		
West Prod. Co., Fee 1	335	6015
Dickinson—		
Atlantic, Jones 4	69	8151
Benoil Co., Levin 3	412	8090
Eureka—		
Tide Water, L. Lackner 1	556	7733
Fairbanks—		
Amerada-Stanolind, Krosz 1	514	6845
Windsor Oil Co., Ley 3	650	6844
Friendswood—		
Humble, Beamer 11	576	6045
West Prod. Co. 2	589	6042
Port City 1-B	614	6045
Goose Creek—		
Sun, Bartlett 12	97	2456
Hankamer—		
Olsen Oil Co., Ezzell A-7	*	3588
Hardin—		
Halliburton, Hanchey 1	540	7650
Hastings—		
Humble, McDeed 11	584	6066
Schindler 9	651	6050
Stanolind, Curkeet A-29	590	6080
Hitchcock—		
N. W. Hunter, Aargo Oil Co. 1	483	5176
Maco Stewart, Fee 3	535	5145
Humble—		
Wilson Oil Co., House 13	*	2606
Markham—		
Hamil & Smith, Hudson 2	*	4884
Orange—		
General Oil Co., State 1	240	6035
Spanish Camp—		
Albert Plummer, Sorrell 2	¶1¼	3020
Spurger—		
Republic, Winters 1	270	6319
Thompsons—		
Humble, Lockwood-Sharp X-18	88	3683
Turtle Bay—		
Stanolind, Silva 8-B	132	6683
West Beaumont—		
Stanolind, Howth A-1	360	5386
West Columbia—		
Frost & Dunham, Martenson 1	590	5324
A. Moore, Gulf 4	460	5397
Texas Co., Abrams 24	466	5622
Withers—		
Texas Co., Thompson 9-A	115	5548
Ft. Bend County—		
Stake, Dew 1, flank of Sugarland, D. Bright sur	*	7511
Harris County—		
O. W. Killam, Dodd 1, Ogburn area, W.C.R.R. No. 12	*	7010
Montgomery County—		
E. R. Kirkpatrick, Foster Lbr. Co. 1, near Conroe, T.&N.O. No. 7	*	5819
Trinity County—		
J. C. Bunn and Texas Co., Bell Bros. 1, K. Hadley sur	*	212

*Failures; †Junked; ¶Million cu. ft. gas.

South Louisiana

Gibson outpost may extend field mile south. Fohs will test higher sand in well near Lirette. Second producer is indicated for field in Gulf.

Lake Charles.—A mile south of production at Gibson, Terrebonne Parish, Shell Petroleum Corporation's Kuntz 1 will drill down to the Gibson sand, productive in the field at 9500 feet, after getting 1/3 barrel of distillate and a 300-pound pressure in a 6½-minute test through ¼-inch chokes of a new sand found at 8635-45 feet.

Fohs Oil Company will make another test on State Bay Baptiste, 2½ miles southeast of Lirette, Terrebonne Parish. This week the well was perforated from 11,172 to 11,178 feet, and after the testing tool had been opened 9½ minutes the pressures built up to 650 pounds. When the test was closed, the pressure was 1800 pounds. The company recovered 500 feet of fluid, the top portion of which was distillate and the balance mud cut with distillate. A cement plug is being set and the company plans to perforate from 9000 to 9010 feet. If other horizons do not prove productive, the well will be completed in the 11,178-foot sand.

Another for Creole

The second oil producer for Creole field, in the Gulf of Mexico, off shore of Cameron Parish, was indicated last week when Superior Oil Company cored 8 feet of sand showing oil in State 2-A from 5149 to 5159 feet. An electrical logging device showed the sand from 5142 to 5161 feet. No drill stem test was made, but casing was set. Superior is drilling all wells in the field from one main structure. When a well is completed, the derrick is skidded 30 feet and the hole is deviated from vertical to the sand. The second well in the field was drilled below 6300 feet and abandoned, but it was plugged back and another hole was made in a different direction. This latter hole was called State 2-A, the abandoned hole, State 2.

Shell Petroleum Corporation has farmed out the Paterson prospect in St. Martin Parish to C. F. Foster of Arkansas. It was agreed that the operator would drill a 10,000-foot well. The prospect is in 15s-12e. Shell Petroleum Corporation drilled a 10,000-foot dry hole in Section 21-15s-12e some time ago, which had several showings of gas.

In the new West Gueydan field, Vermilion Parish, Magnolia Petroleum Company made location for Henry Reese 1, 466 feet north and 466 feet east of the SWc E½ of NE Section 5-12s-2w.

On the Deweyville prospect, Calcasieu Parish, Republic Production Company is preparing to abandon Sabine Tram Company 1 after the well attempted to blow out at 9540 feet. The drill pipe was stuck and the crew was cutting and pulling at the end of the week.

North of Mallard Bay, Cameron Parish, Pure Oil Company has temporarily abandoned Calcasieu National Bank 1 in shale at 8293 feet.

In the South Roanoke area, Jefferson Davis Parish, Continental Oil Company was conditioning mud in J. Sturdivant 1 at 10,333 feet after it attempted to blow out at that depth. The well will be drilled deeper.

North of Bourg, Terrebonne Parish, Barnsdall Oil Company's Barrow Estate 1 was drilling in shale at 10,300 feet at the end of the week. This wildcat is reported to have logged a number of shows up the hole. A slight show of gas was encountered around 9211 feet.

Also in Terrebonne Parish, Shell Petroleum Corporation's Peters 1, Section 73-18s-18e, was drilling in sand at 8666 feet with no shows last week. A slight show of gas was logged in this wildcat around 8600 feet.

Three Miss Play

Amerada Petroleum Corporation has two wells at Raceland, Lafourche Parish, below 11,000 feet. Godchaux 1 is waiting on orders at 11,315 feet after setting 7-inch casing to protect the hole, and South Coast Corporation 2 is drilling in shale at 11,160 feet. Both missed the regular producing horizon for the field.

In Quarantine Bay field, Plaquemines Parish, Gulf Oil Corporation's State QQ 4 is drilling below 11,000 feet and is the deepest well ever drilled in the new field. It is also the second well drilled in the area by the operators. It missed the established producing horizon.

In the Lake Borgne area, St. Bernard Parish, Gulf Oil Corporation is reported to be abandoning State Lake Borgne RR 3 at 10,278 feet after encountering salt water sands.

SOUTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Charenton—		
Kniseley Oil Corp., Hertel et al 1..	*	2000
Pan American, Veeder-South 8.....	145	1835
Darrow—		
Humble, Landry 3	680	6928
East Hackberry—		
F. LeBlanc, Landry 2	*	3620
Garden Island—		
Texas Co., State 29	962	ß925
Gibson—		
Shell, Pelican 6.....	936	9505
Jennings—		
Superior, Leckelt 14	477	7070
Lirette—		
Humble, C. Wurzlow 1.....¶3½		8435
New Iberia—		
William Helis, Bullock 7.....1064		5966
North Crowley—		
Humble, Federal Land Bank 3....	456	7198
Port Barre—		
T. G. Markley, Lahaye 1.....	200	4648
Villa Platte—		
Continental, Tate-McDaniel 1.....	408	9004
Vidrine 1	*	10,506
White Castle—		
Shell, Wilbert 12	600	6403
Plaquemines—		
Gulf, Grand Prairie Levee District 1-17	375	6151

*Failures; †Junked; ¶Million cu. ft. gas.

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North Louisiana Fields

State to take bids on leases near Shreveport strike. Protection acreage scarce and high around well. Lisbon defined northeast and extended southwest.

Shreveport.—Opening of a new basal Glen Rose lime (Pettit) field on the outskirts of this city by R. L. Allison's Ellerbe 1, SW NW 27-18n-14w, Caddo Parish, has created a number of problems for city and state officials. A 40-acre space rule was recommended by the Shreveport division of the Conservation Commission and is being followed.

The well completed in the Pettit zone following perforation at 5548 to 5568 feet, flowed 499 barrels of 43.8 gravity oil on first 24-hour gauge through ¼-inch tubing choke, with tubing pressure 850 pounds and casing pressure 1190 pounds. Separator pressure was 70 pounds and later was cut to 40 pounds. The gas/oil ratio was 591 to 1.

Following is an analysis of the crude, which is sour, resembling that at Lisbon, which produces oil from the same horizon: gravity, 43.8; pour point, zero; basic sediment and water, trace; sulphur, .034; gasoline content, 25 percent at 380 endpoint; kerosene, 48.9 gravity, 510 end point, 355 initial, 20 percent; gas/oil 38.5 gravity first 10 percent cut zero, gradually goes up on cold test, 3.5 percent; fuel oil 22.1 gravity, 110 cold test, 18 percent; loss two percent.

Contact Points

Following are the contact points as revealed by electrical logging device: elevation, 173 feet; massive anhydrite, 4335 to 4590 feet; lower anhydrite stringer, 4660-95 feet; Pettit horizon (basal Glen Rose), 5547 to 5620 feet; top of Glen Rose red beds, 5724 feet; top of Travis Peak, 5878 feet; streaks of sand showing oil and gas, 5823 to 5844 feet and 5844 to 5858 feet (this horizon showed salt water when perforated and tested); Jeter horizon, 4781 to 4856 feet, showing of gas and distillate. Total depth, 6025 feet, with 7-inch casing set on bottom.

The 17-man Caddo Parish police jury, political governing body of the parish, went on record July 20 unanimously to petition Conservation Commissioner Rankin not to set any space limit on wells in the new field.

David B. McConnell, in charge of the Shreveport division, Louisiana Conservation Commission, has recommended a daily allowable of 500 barrels for Allison's new well, which is just about what the well will make daily on ¼-inch tubing choke. The well was shut in July 20 awaiting additional storage, all tankage on location having been filled and no pipe line connections yet having been made.

Gulf Refining Company is leasing actively in the lower part of Township 17, Range 14, south of Shreveport's city limits. Farther south C. L. Gayle and M. W. Grim of Shreveport are assembling a block in Township 16, Ranges 12, 13 and 14, having already secured over 1500 acres. J. B. Hutchinson is leasing a block in Township 16, Range 13.

The announcement of the 40-acre space rule brought approbation from practically all operators, who have seen the failure of small spacing in Rodessa with subsequent lack of payout of investment and who saw the 20-acre space rule at Lisbon abandoned for the 40-acre rule, which proved beneficial to that field as practically all the wells now on artificial lift there are in the area where the 20-acre rule was used.

However, some real estate men residing in Shreveport objected strenuously to the 40-acre rule but failed to appear before Conservation Commission authorities to confer on the matter or present their claims. They wanted town lot drilling units. Town lots on the north and west side of the city are being leased rapidly.

Only One New Location

The new well was completed on a block of approximately 6000 acres that was fairly solid, so that there was little protection acreage. Available acreage so far is either too small in quantity or too high in price, so that there has been but little trading by major companies or larger independents. The "trend" for the most part is northwest, northeast and southeast from the well, toward the shallow Cedar Grove gas field in Township 17 north, Range 14 west.

Only one new location has been announced in the new area, this being

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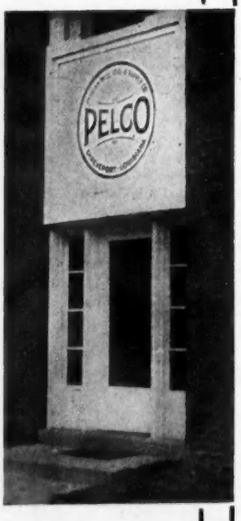

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PELCO TRADE MARK

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New Iberia—Rodessa—Monroe
Cotton Valley—Greggton
Houston

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo Parish (Wildcat)—		
R. E. Allison, Ellerbe 1, 27-18-14..	499	6025
Claiborne Parish (Lisbon)—		
Atlantic, Enloe 1, 28-21-4.....	*	5200
Prairie O&G Co., Lloyd 1, 10-20-5..	1248	5318
Sklar Oil Co., Kilgore 3, 11-20n-5w	360	5290
De Soto Parish (Wildcat)—		
S. S. Alexander, Stell 1, 5-12-16....	*	6002
La Salle Parish (Urania)—		
E. R. Waller, Tremont 6, 30-10n-2e	40	1529
Rapides Parish—		
Texas Co., Well 3, 53-1s-2e	*	8565
Sabine Parish (Zwolle)—		
Hunter Oil Co., Bowman-Hicks 4, 13-7-13	30	2462
Bowman-Hicks 5, 12-7-13.....	250	2624
Union Parish (Monroe)—		
Inter-State Nat. Gas Co., Fee 81, 28-20-3e	¶4	2184
Union Prod. Co., Grayling 7, 20-21-4e	¶11	2064
Union Parish (Wildcats)—		
Standard, Frost Lbr. Co. 1, 14-21-1e	*	9983
Webster Parish (Cotton Valley)—		
Hunt Oil Co., Webb 4, 13-21-10....	768	5942
M. F. Davis 1, 23-21-10	240	5969
Bodcaw Lbr. Co. 1, 33-21-10.....	168	5953
Magnolia, Robbins Unit 1, 21-21-10	559	8512

*Failures; †Junked; ¶Million cu. ft. gas.

J. Thomas Driscoll, Incorporated's Woolworth 1, located 1305 feet north and 600 feet west of SEc 19-18n-14w, in an 80-acre lease. Permit has been applied for and endorsed favorably by the Shreveport division. Several other operators are working on unitizing small tracts for immediate application for permits under the 40-acre space rule.

Three Seek Line Connection

No pipe line connections had been made to the well Wednesday but three companies were seeking the connection. Texas Pipeline Company has a trunk line within 200 yards of the well which is about ½-mile from the Kansas City Southern Railroad and from the old Gas Center refinery of Arkansas Fuel Oil Company.

Another problem confronting state and Shreveport city authorities is the question of preventing contamination of Cross Lake, the city's water supply. The new well is ½-mile northeast of the lake's dam on its lower side and is itself no problem in that respect, but subsequent tests will present the problem. The land in the bed of the lake is owned by the state of Louisiana, only the water rights being owned by the city, which however, owns several hundred acres in the southeast "trend" from the field, including a public golf course and negro park. To the northeast is the 500-acre municipal airport. Shreveport's mayor, Sam Caldwell, is a former oil operator, and was once land man for a major oil company.

The Louisiana Minerals Board has advertised for bids on a number of tracts of lake and bayou beds for August 9, including 77.8 acres in Section 28-18n-14w, just south of the well and between it and the lake's dam.

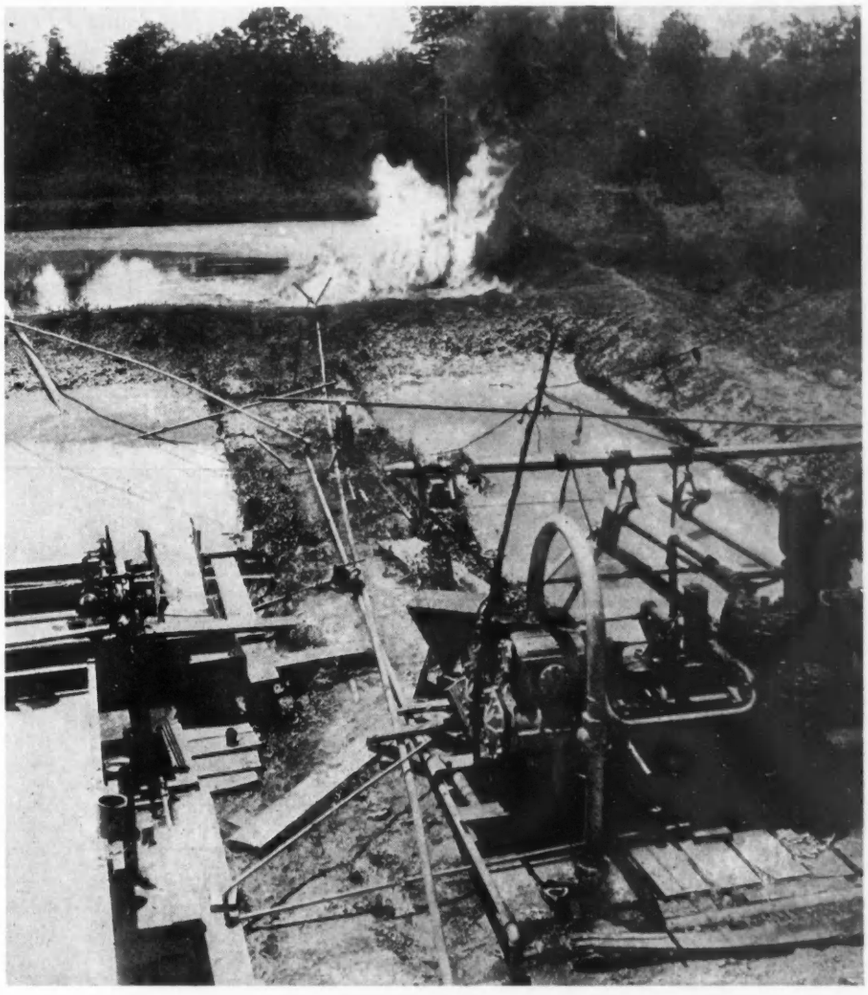
Field Extended

The northeast limit of Lisbon field, Claiborne and Lincoln parishes was definitely defined last week, but the southwest producing limits were extended southwest in two directions by new wells. Saturation in the basal Glen Rose lime has been larger in the southwest trend than in any other part of the field.

One location northeast of production, Atlantic Refining Company's Laura Enloe 1, SE NW 28-21n-4w, was abandoned at 5200 feet after logging only two feet of very poor porosity from 5168 to 5170 feet and showing nothing except mud in a drill stem test.

One location west of a southwest outpost that logged 22 feet of saturation, the largest in Lisbon, Sklar Oil Company's T. M. Kilgore 3, SW SW 11-20n-5w, was completed without use of acid, flowing 15 barrels per hour through 1-inch choke from 5290 feet, after logging saturated basal Glen Rose lime from 5268 to 5287 feet, with 1 foot of shale break. Elevation is 158.5 feet. One-half mile southeast of this well, Henry Fotiades' C. S. Rodgers 1, NW NW 13-20n-5w, was arranging to core at 5359 feet after logging massive anhydrite from 3837 to 4352 feet; elevation is 181.2 feet.

On the west side of production, Prairie Oil & Gas Company's Sallie Lloyd 1, NE SE 10-20n-5w, extended production one location with its completion, with 12 feet of saturation, flowing 74 barrels the first hour through open choke and then 52 barrels per hour for 12 hours through 36/64-inch choke until shut in for storage after acidization with 5000 gallons. Depth is 5318 feet.



Allison's Ellerbe 1 flowing into pits. This completion brought oil production to the city limits of Shreveport, and will be the center of controversy over spacing regulations and production control.

On the north edge of production, A. O. Olsen's Effie Kennedy 1, SW SE 26-21n-5w, a test that logged only 4 feet of saturation, was re-running packer after the well flowed following acidization.

E. T. Oakes continued to swab T. M. Kilgore 1, NE SE 28-21n-5w, 1½ miles northwest of production, with 4300 feet of fluid and oil in the hole. Depth is 5357 feet.

Deep Test Abandoned

Another of North Louisiana's deep wildcat tests was abandoned last week, just 17 feet short of 10,000 feet in Standard Oil Company of Louisiana's and Joe Modisett's Frost Lumber Industries 1, NE SW 14-21n-1e, Union Parish, "in the Schuler trend." Total depth was 9983 feet, hard lime with streaks of sand. The sand had a salty taste. With elevation of 188 feet this test topped lower Marine at 6161 feet, the pink anhydrite at 9060 feet, and the Permian at 9612 feet. The Permian lime does not appear in the North Louisiana Basin farther west; at least it did not appear in the recently abandoned 10,951 foot hole in Section 25-14n-8w, Bienville Parish, nor in the 10,661 foot test drilled in Section 5-19n-5w, Claiborne Parish. Instead, shales and sand appear where Permian lime would be expected.

Eliminates Big Area

Failure of Standard and Modisett's test to find anything in the Permian and the fact it checked so low in comparison with Schuler eliminates a considerable area on the west flank of the Monroe Uplift from Permian producing possibilities.

East of the Monroe Uplift Gulf Refining Company is completing a 10,000-acre block in northeast Madison Parish, where a gravimeter survey was recently completed. Continental Oil Company, which is drilling a test, Singer Manufacturing Company 1, N½ NE NW 3-15n-11e, Madison Parish, also is buying in the northeast part of the parish. Its Singer Manufacturing Company 1 is reaming to bottom at 1740 feet, preparatory to coring ahead for a possible salt dome.

In Union Parish in the "Schuler trend", Tidewater Associated Oil Company, which recently acquired a large block in that area from Lyons and Neely, is taking additional lease in Township 23 North, Ranges 2 and 3 East. The same company has been leasing actively in Claiborne Parish in Township 23 north, Range 7 west.

W. L. McClanahan's Frost-Johnson 1,

SE NE SW 22-9n-13w, east of shallow production at Converse, Sabine Parish, drilled at 5390 feet in black shale July 21, having passed through an anhydrite stringer zone at 5132-5210 feet. Massive anhydrite does not appear in that area. An electrical logging device logged 22 feet of good porosity at 3028-70 feet at the contact of upper and lower Cretaceous, which operators plan to test after reaching contract depth of 5700 feet. They also plan a series of Saratoga chalk tests.

Atlantic Refining Company's shooting unit that has been working in the Blue Lake (West Zwolle) area in Township 7 north, Ranges 13 and 14 west, has completed its work there.

Seaboard Oil Corporation is re-assembling a Webster Parish block on which it drilled a dry hole to 6200 feet in the lower part of Township 22 north, Range 10 west, which checked low compared to Cotton Valley. However, since crude production has been found more than 550 feet down dip on the south side of Cotton Valley and in two horizons of the lower Marine, Seaboard decided to re-assemble its block. It may deepen the old hole.

Michigan lease sale

A public auction of oil and natural gas land leases on 10,000 acres has been announced for August 5 by the Michigan state conservation department. The acreage is in Missaukee, Clare, Midland, Roscommon and Ogemaw counties.

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Arkansas Fields

Two Jones sand completions give Schuler 74 producers

El Dorado, Ark.—Two new wells, both in the Jones sand (lower Marine), were added last week in the Schuler field, Union County, Arkansas, to bring the total of producers in that district to 74, and the number of Jones sand wells to 58. Four new locations were announced. Fifteen tests are drilling, with 3 rigs, and 16 derricks and locations.

One location to the southwest of production, Jones, Murphy and Hurley's Murphy Land Company A-3, NE SE NE 19-18-17, was completed at 7590 feet, after perforating with 120 shots, flowing the first hour at an estimated rate of 125 barrels per hour through 1-inch choke, but later being choked back to 139 barrels daily through 12/64-inch choke. Casing was perforated from 7532 to 7574 feet, Jones sand having been logged from 7534 to 7564 feet.

Roberts and Murphy's C. D. Justiss 1, SEc Lot 6, SW 7-18-17, which logged Jones sand from 7558 to 7611 feet, was completed at 7740 feet after perforating from 7597 to 7617 feet, and Thursday on first hour's gauge flowed 94 barrels through ½-inch tubing choke.

East of where Tide Water Associated Oil Company drilled a failure, Sam Severesky has assembled a block of over 1000 acres around Section 34-13-18, Ouachita County, for a test. In Union County, east of Schuler field, Atlantic Refining Company continues to buy acreage, having acquired leases in Section 7-18-16, and in 7-18-17. The Texas Company is taking scattered leases in the south half of Township 19, Ranges 16, 17 and 18, and is also leasing in Township 19, Range 11.

Tide Water Associated Oil Company has a seismic unit working in Township 16, Range 17. Standard of Louisiana has a unit in Township 18, Range 18, and Phillips Petroleum Company has one in Township 19, Range 15, all in Union County.

Schuler hearing

The Arkansas Board of Conservation will hold an open hearing at El Dorado at 10 a.m. July 25, to set the August allowable for the Schuler field, which now has 74 producing wells. Allowables will be set for the Jones (lower Marine) and Reynolds (Permian) lime. Allowables will also be considered for the Village, Magnolia and Buckner fields, all in Columbia County, and all of which produce from the Permian. The Miller County (Rodessa) allowable will also be considered.

ARKANSAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Union County (Schuler)—		
Jones, Murphy & Hurley, Murphy Land Co. A-3, 19-18-17	139	7590
Lion Oil Co., Clarence 1, 7-18-17	1776	7663
Nevada County (Troy)—		
Benedum & Trees Oil Co., Blakeley & Suckle 1, 4-14-20	200	2128

*Failures; †Junked; ¶Million cu. ft. gas.

Illinois Developments

Development more active than in any previous period.

Centralia area drilling revived by good well showing.

Olney, Ill.—A survey of drilling operations throughout the Illinois Basin area shows development to be proceeding at the most rapid pace in the history of the state, with all indications pointing to a record number of completed tests for the current month.

The Centralia area, scene of shallow drilling which was believed past its peak several weeks ago, has been stimulated by The Texas Company's Tate 1, Raccoon Township, Marion County, which found thick Benoist, Aux Vasse and McClosky saturations a few miles east of the Centralia pool. In the latter section, over 330 producing wells have been completed in an area of four square miles.

North of Centralia 3½ miles, in the northwestern section of the Centralia pool, Shell Petroleum Corporation and McBride Oil Company have both skidded derricks for the purpose of making twin wells from the Stein and Benoist sands. Shell Petroleum Corporation's Criley 1, Section 35-2n-1w, Meridian Township, Clinton County, was a good producer in the Stein sand, bottomed at 1215 feet, and the rig has been moved 50 feet south for a twin well, Criley 2, which will be drilled to the lower Benoist. McBride Oil Company's Carson 1, Section 35-2n-1w, Meridian Township, Clinton County, 660 feet from Criley 1, made 301 barrels initial from the Stein sand, bottomed at 1218 feet, and is now producing between 150 and 200 barrels daily. The twin test will be made 50 feet to the north and will be designated as Carson 2.

The Texas Company's confirmation of its Raccoon Township pool, H. Corbin 1, Section 5-1n-2e, west offset to the discovery, flowed 220 barrels in 2 hours and 20 minutes while running tubing. Bottom was at 1685 feet. While some production was trucked from the company's new wells last week, they will not likely be opened for a period sufficient to determine their true worth until a pipe line has been completed to the area. The Texas Company will construct a line northwest to connect with Illinois Pipe Line Company's system at Sandoval. Next completions in this new pool will be J. G. Wanner's Raccoon School 1, Section 6-1n-2e, which had casing set to 1719 feet and was to drill in with cable tools, and The Texas Company's Canull 1, a 500-foot westward offset to Corbin 1, which was drilling at 1695 feet with the pay expected momentarily.

Kingwood Oil Company and Illinois National Oil Company's Yoten 1, Section 7-7n-3e, ¾ mile south of present production in the St. Elmo field of Fayette County, cored 49 feet of saturated Stein sand from 1381 to 1430 feet, which made it one of the best prospective producers in that field.

Crawford County's first deep test, Warren Hastings et al's K. Athey 1, Section 18-8n-12w, Prairie Township, took a saturated core from a limestone formation at 2845 feet. It was identified as Niagara lime of the Mississippian series, which is known to extend from Clark County southwest to Missouri in varying depths. Nelson Brothers Company is drilling the test.

In Lawrence County, Joe Kesl et al's Scott Gray 1, Section 13-4n-11w, Russell Township, near Russellville, encountered a gas pocket at 1020 feet in the Buchanan sand and the well gauged 2,500,000 cubic feet. It is an unusually large gas well for this section and may be used commercially.

Outstanding among the new operations announced last week was the first well to be drilled by Continental Oil Company east of the Mississippi. Derrick has been erected for the company's W. C. Eveland 1, 4 miles northwest of Newton, Jasper County. The wildcat, on a 36,000-acre block, will be drilled by Parker Drilling Company of Tulsa. No maximum depth has been set for the test. The McClosky sand is expected between 2500 and 2700 feet.

ILLINOIS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bond County—		
Universal & DeMayo, C. E. Molden 1	*	2045
Clark County—		
Miller et al, Dutro 1B	48	498
Firman Equipment Corp., Olwin 1	40	484
Clay County—		
Pure, Tetrick 2A	330	3040
Tetrick 3A	937	3038
N. V. Bunn 1	799	3055
Daisy Bunn 1-A	1099	3042
Chas. R. Bunn 1A	582	3050
Ohio, Negley 1	*	3150
Clinton County—		
Bell, Riley & Lacy, Budde 1	350	1376
Adams O&G Co., Coe 1	251	1378
L. Rothmeyer 1	109	1369
L. Rothmeyer 2	115	1373
Felton 2	42	1372
E. Buehler 1	40	1387
Keister 2	20	1348
Kaelin 1-A	17	1376
Gulf, Buehler 12 South	237	1366
Buehler "Central" 2	120	1371
Buehler South 3	35	1378
Shell, Allison 6	62	1378
Wm. Hanseman 3	43	1376
Crawford County—		
Ohio, Baird 12	10	966
Fayette County—		
Jarvis et al, Yakey 1	365	1577
Carter, Cummings 1	312	1606
Logue 1	237	1529
Jefferson County—		
Carter, Hawkins 1	255	1940
Lawrence County—		
Payne et al, Emerson & Oliphant 1	*	1215
Marion County—		
Geo. Anderson, Marshoff 1	250	1378
E. A. Baker 1	150	1380
Bell O&G Co., Oestrich 1	100	1390
Capital City Dev Co., Home Bldg. & Loan 1	150	1388
Centralia Coal Co., Fee 1A	350	1375
Fee 1	225	1387
Cooper & Lacy, Candy Co. 1	200	1370
Cypress O&G Co., Prill 1	20	1386
Paul Doran, Koelling 1	325	1371
Westerfield 1	200	1371
Dorsey et al, Gudter 1	150	1380
Gill et al, P. Church 1	20	1380
C. McBride 1	250	1363
Huff-Stouffer-Boughton, Ganchenorer 1	400	1385
Illinois Power Co., Fee 1	216	1384
Hawley Oil Co., Reading 1	100	1223
Richland County—		
Texas Co., C. Zirkle 3	1085	3050
J. V. Wicklund, McCauley 1A	1053	2984
Pure, Montgomery 5A	264	3011
C. T. Montgomery 7B	203	2998
St. Clair County—		
Pioneer O&G Co., Lindeman 2	20	560
Saline County—		
C. F. Bolton, Wesley 1	*	360
Vermilion County—		
Meyers et al, Foreman 1	*	1430
Wabash County—		
Cecil Kneipp, Price 10	50	1564
Washington County—		
Parshall-Graham Oil Co., Harmon 1	*	1925
Wayne County—		
Pure, Bowles 1	28	3167
E. Byars 1	*	3300
White County—		
Palmer Corp., Ziegler & White 1	*	3408

*Failures; †Junked; ¶Million cu. ft. gas.

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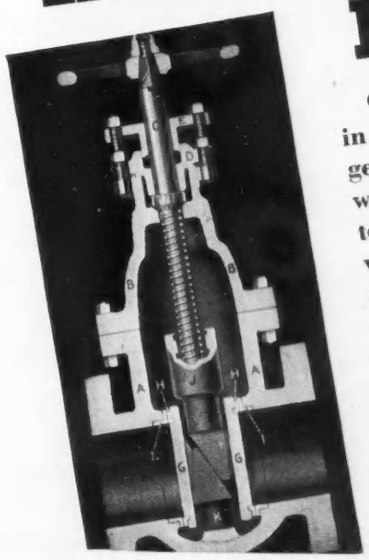

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Eastern States

Birk City, Kentucky, field extends into Davies County. Number of completions increased throughout East area.

Pittsburgh. — Indications that the Birk City pool, opened in Henderson County, Kentucky, in April, extends over a considerable area in Daviess County was given by two tests last week. Globe Oil & Gas Company's James 1 encountered the McClosky sand at 1862 feet and at last report had oil standing 1500 feet in the hole. It was to be deepened into the sand, after which acid treatment was to be given. It is three-quarters of a mile northeast of Major Oil Company's O. Greer 1, first test to be completed on the Daviess County side of Green River. The test is on a 160-acre lease and was drilled with a cable rig by Oliver Jenkins. Trouble with quicksand delayed the drilling, which took 55 days.

Nearby, Major Oil Company's Harrington 1 cored a satisfactory McClosky saturation and was awaiting cable tools to complete. Tanks were being erected.

Offsetting O. Greer 1 by less than 200 feet, Snowden and McSweeney and W. E. Hupp et al's L. Taylor was nearing production depth. Major Oil Company will drill another O. Greer 1 offset on the Nelson lease.

Three producers were added to the growing Birk City field last week, all on the Henderson County side. Carter Oil Company's O. L. Boswell 3 initialed 1110 barrels when bottomed at 1907 feet. Hoosier Drilling Company's C. T. Blackwell 6, on the discovery lease, was swabbed in at the rate of 45 barrels an hour after acid treatment and should compare favorably with other wells on this lease. Location has been made for C. T. Blackwell 7.

Offsetting A. E. Roscoe's O. Benham 1, producing between 400 and 500 barrels a day on a one-acre lease, Carter Oil Company and W. E. Hupp et al's Mauzy-Gatewood 1 was completed, acidized and pumped between 500 and 600 barrels a day. Carter Oil Company's T. Jones 1, on a 24-acre tract, had a good core from 1900 feet and

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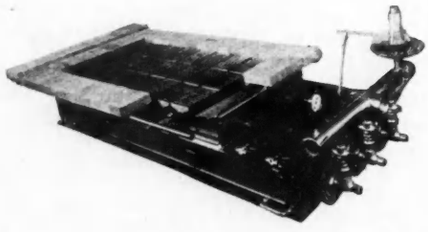

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SEE COMPOSITE CATALOG PAGE 1914

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EASTERN FIELDS
Completions

OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
Athens County—		
Weimer & Ross, Ackley 2	5	366
A. D. Townsend, Niggemeyer 4	¶.70	1709
Gallia County—		
Burton & Utsinger, Mink 1	¶	1547
Guernsey County—		
M. J. Purdy, Burson 2	*	1620
Knox County—		
H. E. Perkins, Wyant 1	*	2660
Licking County—		
McClay Bros., Porter 4	130	3120
Wehrle Gas Co., Morrison 1	*	2915
Blue Rock O&G Co., Moran 1	*	2935
Lorain County—		
Ohio Fuel Gas Co., Baker 1	¶.20	2567
Meigs County—		
F. & O. Royalty Co., Hawk 2	¶.20	609
Perry County—		
Kissling Drilling Co., Welch 1	20	3030
Preston Oil Co., Trimmer 8	12	3662
C. Z. Ruth, Nuzum 20	3	1148
Big Run O&G Co., Weaver 3	¶.20	1150
N. L. Altier, Monahan 11	*	1082
Ross County—		
Glenwood O&G Co., Glenwood Park Farm 1	*	2674
Seneca County—		
Sun, Crum 1	60	2077
Stark County—		
Kline, Stitz 1	¶.50	4050
Washington County—		
John Uhl, Young 6	2	859
John Smith, Robison 16	2	696
C. W. Peavy, Smith 1	¶.25	1246

WEST VIRGINIA

Boone County—		
Columbian Carbon Co., Wood et al 4	¶.07	4823
Calhoun County—		
H. S. Adams, Wilmouth 1	¶.25	2120
Gilmer County—		
P. K. Weekley, Brannon 1	5	1750
McCall Drilling Co., Gainer & Wigner 1	¶.05	2140
Kanawha County—		
Pure, Williams Coal Co. 286	5	3142
Columbian Carbon Co., Castro 1	¶16.00	4892
Jones 1	¶2.55	5050
Liosag Fuel Co., Matthews 1	¶8.25	4990
Lincoln County—		
Kanawha Gas & Utilities Co., Cummings 1	¶.17	3368
Blude Ridge Gas Co., Scraggs 2	¶.07	3105
Pleasants County—		
S. Powell, Wagner 1	*	900
Putnam County—		
H. H. Pine, Eggleton 2	¶.60	1127
V. C. Smith Co., East End Land Co. 1	¶.05	4125
Tyler County—		
L. G. Pigott, Ash 1	*	1045
Wirt County—		
S. W. Douglass, Kidwell 1	¶.05	2650

*Failures; †Junked; ¶Million cu. ft. gas.

was waiting for cement to harden before drilling in. Aetna Oil Service's Dempewolf 1 was nearing production depth, while another offset by the same company (Pitt 1) was drilling below surface pipe. With 1500 barrels of storage filled, pumping was suspended for several days at O. Benham 1. Pipe line facilities have not been extended to keep pace with the rapidly growing field, despite a Sunday shutdown inaugurated a week ago.

Sun Oil Company's deep test near Corydon, Henderson County, being drilled by Miller and Shiarella, was in Jackson sand at 2380 feet. Miller & Shiarella's Foley 13, in the Livermore pool, promises to be a good producer in the Jett sand at 750 feet.

In Webster County, Kentucky, near Sebree, Iley Browning's wildcat encountered a gas flow at 50 feet in the black shale above the Corniferous lime at 2835 feet. The well may be shot to make it a gas producer.

Sun Oil Company's W. W. Gray 1, Section 29-8s-14w, Point Township, Posey County, Indiana, encountered a large gas pocket last week, giving further indication that a good oil well may result with increased drilling. Bottom was at 1200 feet, and the test is being rotary drilled by Taylor Drilling Company. Sun Oil Company's Heil 1, Marrs Township, being drilled by H. & H. Drilling Company, was below 800 feet.

At Carter Oil Company's C. Graulich 1, Section 4-7s-14w, Black Township, Posey County, deepest test to be drilled in Indiana, preparations were being made to resume from 4329 feet where flood waters of the Wabash River recently halted operations.

Sun Oil Company will drill a second test in the old Tiffin field, on the Tiffin Business University farm, north of Tiffin, Seneca County, Ohio. The company's Mary Crum 1 indicates a good producer. It has been shot and was being prepared for pumping.

Hanley & Bird's M. E. Woodward 1, Woodhull Township, Steuben County, on the Empire state side of the New York-Pennsylvania deep sand gas fields, encountered the Oriskany at 3715 feet. First gas found two feet in the formation, gauged 1,400,000 cubic feet and had a rock pressure of 1300 pounds. The well is being deepened. Two other operations are active in this area, both by G. L. Cabot, Inc. That company's Coral Cook 1 was drilling at 3260 feet, and its Gibson was at 1140 feet.

Completed wells gained in all Eastern States last week. Ohio showed the largest gain, from 14 to 21, the past week's completions including 8 oil wells with an av-

Company, Well and Location	Init. Prod. Bbls.	Depth
KENTUCKY		
Butler County—		
Porter Evans et al, Harper 1....	*	700
Daviess County—		
Major Oil Co., Greer 1.....	165	1892
Dougherty & Ellis, O'Flynn 3.....	40	1095
Ellis & Ashby, Howard 10.....	15	....
Hancock County—		
Vickers et al, Morse 1.....	*	594
Henderson County—		
Hupp et al, Jones 2.....	500	....
O. L. Boswell 1.....	200	1904
Hoosier Drilling Co., Blackwell 4..	225	....
C. T. Blackwell 5.....	350	....
Kentucky Nat. Gas Co., Haynes 1..	*	....
Lee County—		
A. Burnett, Day Lumber & Coal Co. 5	75	1100
South Penn Oil Co., Flahaven 107..	5	1080
McLean County—		
Vickers et al, Hoover 2.....	*	1260
Martin County—		
J. T. Diedrich, Paley 6.....	12	1453
Ohio County—		
Rex Pyramid Oil Co., Ambrose 7....	15	....
Nollem Oil & Gas Co., Crowe 7....	*	....
Powell County—		
Joe T. Brown, Lowery 3.....	1	....
PENNSYLVANIA		
Alleghany County—		
Alex Wally, Hunter 1.....	¶	....
Greene County—		
Equitable Gas Co., Conklin 1.....	¶.20	3634
Indiana County—		
Equitable Gas Co., Armstrong 3237.	¶.04	3537
Potter County—		
New York State Natural Gas Co., Morley 1	*	5325
Washington County—		
Union Gasoline & Oil Corp., Van Kirk 2	5	3073
Finleyville O&G Co., Finley 72.....	*	4231
PENNSYLVANIA		
Butler-Armstrong District		
Hoch & McCullough, R. W. E. Hoch	*	....
Bradford District		
C. M. Lippert et al, Lippert.....	1	....
Mix Creek Oil Co., Fee.....	1	....
First Nat'l Bank Port Allegany....	2	....
Bradford Transit Co., 12 wells....	12	....
Forest Oil Corp., 3 wells.....	3	....
Niagara Oil Corp., 6 wells.....	6	....
Pine Run Oil Co., 130-1-2-3-4-6, Bing	4	....
Bradford: Water (Pressure) Wells		
Forest Oil Corporation, 2 wells....	...	....
Niagara Oil Corporation, 3 wells...	...	....
Victory Oil Co., Wright, 1 Well....	...	....
Hardwick, Rice & Tuohy, Fisher, 1 well	...	....
Middle District		
M. E. Bolles, E. M. Bolles.....	1	....
George Hugus, A. B. Beck.....	*	....
W. E. Fertig, W. E. Fertig.....	2	....
NEW YORK-PENNSYLVANIA: Gas Field		
New Penn Development Corp., M. K. Husted	gas	....
New York State Natural Gas Co., W. A. Simmons	gas	....

*Failures; †Junked; ¶Million cu. ft. gas.

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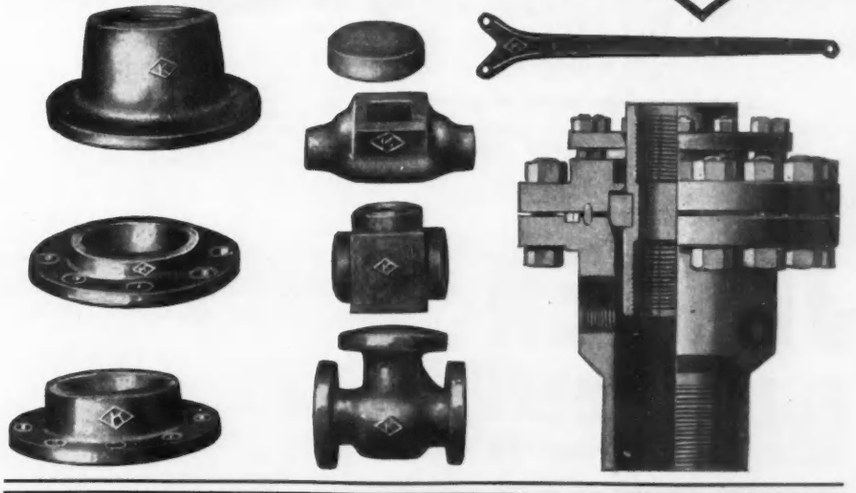

erage initial daily production of 17 barrels, 7 gas wells and 6 dry holes. West Virginia completions gained 6 to 15, the lot including 2 oil wells of 5-barrel initial production each, 11 gas wells and 2 dry holes. Kentucky operations gained 4 from the previous week, last week's 17 including 12 wells with an average initial daily production of 133 barrels and 5 dry holes. Pennsylvania completions gained 1, the week's 6 comprising a 5-barrel producer, 3 gas wells and 2 dry holes.

EDWIN ROBINSON, St. Louis operator, has moved his headquarters to the Byrd-Watson Building, Centralia, so as to be in close touch with his operations in the Clinton-Marion County area of the Sucker State.

Michigan Fields

Nine operations started near Clare County strike. Allegan County wildcat expected to revive activity. Production tests fail on Jerome Township well.

Mt. Pleasant, Mich.—Two new tests had been spudded, four other rigs completed, and material hauled in on three other locations 10 days following completion of S. J. Higelmire Trustee's Van Horn 1, wildcat discovery in Clare County.

Two factors are contributing strongly to the rapidity of operators in getting into the Clare play, first for oil in the county. Acreage is more split up among majors and independents than in virtually any previously opened field in the state. Second, it marks the first discovery well in Central Michigan to be developed during the peak of the summer with consequent good roads and favorable conditions for moving in equipment. A third contributing factor is the fact that between 75 and 150 less strings of tools have been active so far this summer as compared to a year ago.

Shallow Lime Strike

Expected to revive Western Michigan activity to its spring pitch was a shallow lime strike made July 18 by W. J. Cline on the Helmer 1, NE SW SE, Section 36-4n-14w, Oversiel Township, Allegan County. Bottomed in Traverse limestone, the only commercial formation so far drilled in Allegan, at 1464 feet, the wildcat flowed 100 barrels in 45 minutes. Later, with more storage erected, operators reported an average of 15 barrels an hour over a 6-hour test through ¼-inch choke and 600 pounds back pressure. The well is 2 miles northwest of Monterey pool and 3½ miles southwest of Salem pool, both in Allegan County, and both producing from the same limestone horizon. How much of a drilling play the well will cause is problematical due to the great irregularity which has been found in the shallow Traverse fields so far developed in the district.

There appeared little possibility of the Oversiel Township discovery (four dry

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MICHIGAN Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
J. W. McIntosh, Shanz 1, sw nw ne 14-1n-14w	*	1447
Eureka Dev. Co., Widenfeller 4, nw nw sw 29-4n-12w	*	1582
Columbia Oil Co. Richter 4, sw sw se 30-4n-12w	70	1600
Lentz & Miller, Jankowski 1, ne ne nw 32-4n-12w	*	1607
Voorhees Drilling Co., Morcinak 1, ne ne nw 33-4n-12w	*	1645
L. B. Chulski, Tuttle 1, se ne se 22-3n-12w	5	1729
Muskegon Dev. Co., Conklin 2, se se sw 9-3n-13w	150	1639
Victory & Gordon, Wabecke 1, nw sw sw 11-4n-13w	*	1660
Fowler Synd., Birchard 1, nw nw se 20-3n-11w	*	1965
Cass County—		
Gordon Oil Co., Wright 1, nw nw ne 18-5s-13w	*	1180
Gratiot County—		
Larson & Baker, Stoughton 1, c w½ 33-11n-4w	¶3¾	961
Isabella County—		
Chartiers Oil Co., Currie 4, se se nw 8-16n-4w	*	3900
Midland County—		
McClanahan Oil Co., Raymond 1, nw se se 27-16n-1w	225	3812
Montcalm County —		
Taggart Brothers, Schnik 4, c ne 7-12n-9w	¶6½	1139

*Failures; †Junked; ¶Million cu. ft. gas.

holes drilled the past month on the northwest flank of the Monterey pool appear to preclude any possibility of the well being an extension producer to the older field) detracting from the Clare County development.

Tubing Helps Flow

Higelmire's Van Horn discovery well produced 1026 barrels through 5-inch casing the first 5 days under production. Tubed the seventh day, operators reported 340 barrels the ninth day. Located in Freeman Township, NE SW NW, Section 3-18n-6w, Van Horn logged top of Monroe limestone at 3891 feet and bottomed in flow oil at 3895 feet.

Pure Oil Company spudded July 18 on a test in NE NE SW, Section 27-19n-6w, Redding Township, 1¾ miles due north of the discovery well. Contract with Lupher Drilling Company calls for rotating in the 8-inch through the drift (640-700 feet) where the well will be standardized and carried to the producing formation with cable tools.

McClanahan Oil Company spudded in 10-inch drive pipe with cable tools July 19 on Perkins 1, NE NE NE, Section 15-18n-6w, Freeman Township, 1¾ miles south and ¾ miles east of the discovery.

Wicklund Development Company has completed rig 1½ miles due west of the discovery in the NE NW SE Section 5-18n-6w. Higelmire Trustee's Van Horn 2, SE SW NW, Section 3, south of the discovery well, was to spud July 21. Socony Vacuum Oil Company completed rig on north offset to discovery; Gulf Refining Company completed rig foundation for the east offset, moved in material for No. 2 on the same lease, and Big Basin Oil Company moved in material two locations west of Socony's rig.

Hoping to avoid a bad cave section between 700-900 feet, Gulf contracted with Lupher Drilling Company to rotate in 6-inch below the Marshall, 1600-1800 feet, before standardizing. Cable tools are being used on all other tests excepting Pure and Gulf's.

Costs May Be Hiked

A price of $1.75 per foot for cable tools has prevailed in Buckeye and other districts this year. However, there appeared a strong possibility that this would be upped due to the 600-700-foot drive string and the two bad cave sections, 700-900 and 1900-2200 feet.

Simrall Pipe Line Corporation has placed in service 4 miles of 4-inch line between the well and Lake George, where crude is being shipped to refineries on the Ann Arbor Railroad.

Sun Oil Company this week abandoned earlier attempts to produce the State B-1, Section 9-15n-1w, Jerome Township, Midland County, at the 4642-59-foot zone in the lower Monroe limestone, where an oil-gas show was logged two weeks ago. The formation would not take 1000 gallons of acid. It is planned to deepen.

Possibility of revived activity in the Edenville district, Midland County, loomed this week, when McClanahan Oil Company's Raymond 1, Section 27-16n-1w, acidized into a 225-barrel producer from the Dundee limestone at 3812 feet. It is six locations south of previously drilled production in the field.

An oil-gas show logged in Leonard Prospecting Company's Huron Milling 1, Section 10-16n-15e, Huron County, at 2100 feet, in the Monroe limestone, after drilling the Dundee section dry, will result in a production test. Operators are reaming down 5-inch casing to shut off a water zone.

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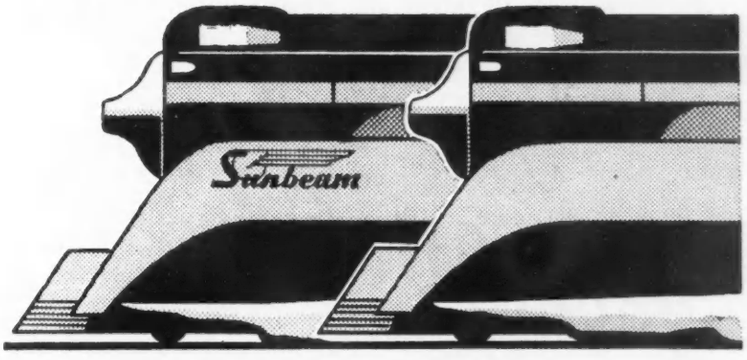

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Ar. HOUSTON ..... 9:25 P.M.

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Ar. DALLAS ..... 2:00 P.M.
Ar. FT. WORTH (No. 83) 3:00 P.M.

Southbound

Lv. FT. WORTH (No. 82) 6:50 A.M.
Lv. DALLAS ..... 8:00 A.M.
Lv. WACO (Bus) ..... 9:15 A.M.
Ar. HOUSTON ..... 2:00 P.M.

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California Fields

Seeking to develop greater natural gas reserves.

Well starts deepening campaign in Mountain View field.

Los Angeles.—With the discovery of a new gas field between Suisun bay and Fairfield, lying in the Potrero Hills, near San Francisco, and an extension to be sought to the Buena Vista Lake gas field by Ohio Oil Company, operators are evidently out to develop greater supplies of gas to assure various public utilities of a ready supply during the winter months.

Richfield Oil Corporation's Potrero 1, Section 10-4-1, in the Rio Vista gas field, came in for an initial flow of 8 to 25 million cubic feet of gas per day on a preliminary drill-stem test.

Ohio Oil Company is launching a gas test on its holdings between Elk Hills and Buena Vista Lake gas field, the latter of which it discovered a short time ago. This new venture will seek out an extension to the Elk Hills anticline on Section 10-31-25. Geologists have contended for some time that the forces which shoved up Elk Hills did not stop abruptly and that underground the structure skirts the north edge of the Buena Vista Lake field and continues on down to the gas field. Testing of this theory is expected to be watched closely. The same company has drilled out cement in No. A-8 at Buena Vista Lake and is preparing to carry this project deeper. In Glenn County, the company has landed protection string in its wildcat at 5653 feet, and while no gas zone has been encountered, this test will be deepened in hopes of picking up an oil formation.

Hogan Petroleum Company started something the other day when it completed Porter-Day 11 in the Nichols zone at Mountain View for a substantial yield. Because of this one good well scores of new deepening jobs are slated to get under way at once. Mohawk expects to redrill most of the wells it completed many months ago on the Hood lease. Hancock will go back into a few of its wells, while Wood-Callahan Oil Company, which enjoyed considerable success on the National lease in the central portion of the field, also is planning to renew activities.

Wells are flowing from the Chanac and Santa Margarita zones at Mountain View. Operators have endeavored to obtain production from the Temblor, and while showings have been found, nothing worthwhile has yet been developed. However, this may be the signal for deeper drilling southeast of Bakersfield.

From a standpoint of chance, Mountain View proved to be one of the surprises for the floor of San Joaquin Valley. Scouts say it was originally discovered nearly a year before Dana Hogan entered the district to prospect, an event which resulted in completion of the so-called discovery well. Shell, Chanslor-Canfield-Midway had large blocks leased for years, only to quitclaim thousands of acres before the first well was brought in from the Chanac zone.

Following discovery of Mountain View in 1934, wildcatters began to scatter out along the floor of the valley, south and southeast of Bakersfield, all hopeful that new extensions or new fields would be found. Several of the more fortunate operators developed fair production at Edison. Others went to the foot of the Grapevine, but so far only scattered showings of oil and gas have been encountered in deep tests.

The latest development, however, is that of the Richfield Oil Corporation, which has launched a new test at Union Avenue, a few miles south of Bakersfield, and southwest of Mountain View. Richfield will drill in Section 6-30-28, a site virtually surrounded by abandoned holes.

Continental's KCL A-3, Wasco, has made some excellent progress in Section 8-27-24, north of the company's discovery well. Thirty days after spudding, this project had drilled to below 10,000 feet. This included lowering and cementing surface pipe and 5500 feet of

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10¾-inch casing, which gave the driller an average of 333 feet per day. Rapid headway also is being maintained in the company's Seaboard-Associated KCL C-1 midway between Wasco and Rio Bravo. Coring is under way below 12,700 feet.

After occupying the anxious seat for the past 10 days, land owners, as well as the Superior Oil Company, have turned optimistic as to the possibilities of the Helbling 1, a southeast outpost test in the Rio Bravo field, Kern. At a depth of 12,220 feet, a new oil zone was encountered, according to field reports, and this had been taken in down to 12,254 feet with the expectation of going deeper into this formation before casing is landed. Geologists say the new zone is related to the Temblor and is too shallow for the Eocene.

Union Oil Company of California brought in an excellent well at Rio Bravo last week. KCL 3-34, Section 34-28-25, swabbed in for an initial yield of 3600 barrels of clean 37.6 gravity oil per day along with 4,100,000 cubic feet of gas from a depth of 11,470 feet, with 7-inch casing set at 11,206 feet.

In addition to a new well at Rio Bravo, Union Oil Company of California also brought in Rosecrans 23 in the Rosecrans field, south of Los Angeles. It gauged 1800 barrels of 34.5 degree gravity oil per day from 7770 feet. Rosecrans 20 at 7855 feet is preparing for a test, and Rosecrans 21 is below 7400 feet. Rosecrans 22 is down to approximately 7500 feet. Foundation is being completed for Rosecrans 24. Union also brought in Frank Vicente 3 in the southwest area of Santa Maria Valley field for an initial yield of 800 barrels of 15 degree gravity oil per day at 5322 feet.

Seventy feet of oil sand formation has been cored in Wood-Callahan Oil Company's Community 2 in the Edison field, southeast of Bakersfield, and preparations are under way to make a production test at once with bottom of the hole slightly below 4500 feet. This project topped what is believed to be the Temblor series, and its completion may bring about a renewal of drilling activities in this field.

CALIFORNIA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Athens-Rosecrans—		
Barnsdall, Trust 4	1292	7800
Superior, Callender 1	318	7675
Torrance—		
W. P. Andrews, Lomita 11	600	4971
Calmont, No. 1	675	4956
Hampshire, Hampshire 1	220	4990
Independent Drilling, No. 1	475	4966
Wilmington—		
Bankline, UP (LB) 7	275	2966
Hancock, Harbor (LB) B-10	700	4042
Republic, Harbor (LB) 1	5465	4020
Harbor (LB) 2	5800	4042
Richfield, Pacific Dock (LB) 5	688	3644
Royalty Service, PE 1	2000	3750
Union Pacific, PD (LB) 1	964	4073
Belridge—		
Belridge, No. 5	2100	8473
Midway-Sunset—		
American Naphtha, Anoco 1	20	2625
Ten Section—		
Shell, KCL B-32	1490	8202
Santa Maria Valley—		
Union, Vicente 3	560	5322
Ventura Avenue—		
Tide Water Associated, V. L. & W. 19	1450	9906
Arvin—		
Petrex, Petrex 1	*	5286
Union, Berry 1	*	6812
Belridge—		
General Petroleum, St. Helens 1	*	8683

*Failures; †Junked; ‖Million cu. ft. gas.

New Mexico Fields

Vacuum west extension test discourages further drilling. Lea County wildcat has Delaware horizon as objective.

Hobbs, N. M.—Trend of production to the west of the Vacuum field may be partially defined by the failure of an outpost to make a commercial producer after drilling through the oil section and acidizing. The Texas Company's State 2-D, C SW NW 27-17s-34e, 1 mile southwest of nearest production, is likely to make a small pumper after additional acid treatments but will discourage new drilling in the immediate area. The lime section was penetrated to 4860 feet, or 806 feet sub-sea, resulting in small amount of free oil. The initial acid treatment of 1000 gallons required a maximum pressure of 2000 pounds. Following the recovery of the oil load the well swabbed 6 barrels of oil in 8 hours.

Vacuum field contributed 4 of the 9 new Lea County operations listed the past week. Shell Petroleum Corporation has started work on State 1-G, C SE SE 22-17s-34e, and State-Swigart 1, C NE SE 25-17s-34e. Phillips Petroleum Company has derrick up to State-Santa Fe 9, C SE SE 21-17s-34e. Ohio Oil Company's State-McCallister 2 is a north offset to its recent completion of this permit. The latter also made location for State 1, C NE NE 20-17s-34e, a northwest outpost on a short-term lease. The Texas Company's State 1-Q, C SE SE 25-17s-34e, flowed 303 barrels natural on potential gauge at 4725 feet.

The allowable production of prorated wells in Lea and Eddy counties was cut 1 barrel to 55 barrels daily each for the July 16-31 period, according to C. G. Staley, umpire. The reduction was made so as to absorb new completions without raising the state quota.

The Delaware horizon is to be the objective of Warren L. Todd et al's Lemon-Tidal 1, C NW SW 17-21s-32e, southwestern Lea County wildcat, which will deepen from 3752 feet. The test was abandoned in May, 1936, after fulfilling contract depth. The salt section at 1132-3260 feet is of greater thickness than usual, although the geological markers register a high structural position for the area. Jas. Mascho et al's Cloyd-Conoco 2, C SW SE 20-22s-33e, which is also seeking the Delaware, was drilling salt at 1980 feet.

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Company, principal producer and lease owner in the Maljamar pool, Lea County's oldest oil area. The company recently completed Baish 9, offsetting production, flowing 60 barrels at 4145 feet. Rig has been moved to Baish 11, C NW NW 21-17s-32e. Three additional tests are underway.

Continental Oil Company et al have rigged up on Britt 2-B-15, C W½ SW NW 15-20s-37e, east flank of the Monument field, and on Reed 6-B-23, NE SW SE 23-20s-36e, northwest edge of the Eunice field. In the Mattix field, the partnership is drilling below surface pipe on Jack 1-A-29, NEc 29-24s-37e. Addison Oil Company and Gulf Oil Corporation's Knight 3, C NE NW 27-24s-37e, is also a new project for the latter area.

An open-flow initial of 50,000,000 feet of sweet gas was developed by The Texas Company et al's Cagle 2-A, SW NE NW 9-26s-37e, Rhodes pool, from lime at 2880-3060 feet.

Rowan-Nichols Oil Company's State 1, northeastern Lea County wildcat, was drilling in hard lime at 4940 feet.

NEW MEXICO
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Chaves County—		
Fisher et al, Etz 1, c se ne 23-7s-36e	*	2000
Eddy County—		
Moran et al, Crawford-Smith 1, nw nw sw 22-24s-26e	*	2005
Repollo, McIntyre 3-C, nw se ne 20-17s-30e	350	3300
Lea County (Rhodes)—		
Texas Co. et al, Cagle 2-A, sw ne nw 9-26s-37e	¶50	3060
Lea County (Hardy)—		
Rush et al, Wantz-Conoco 2, c nw sw 21-21s-37e	46	3775
Lea County (Langlie)—		
Anderson-Prichard, Wells-Conoco 2, c sw se 5-25s-37e	500	3506
Ohio, State-Fleming 1, ne ne ne 2-26s-37e	94	3331
Lea County (Maljamar)—		
Maljamar O. & G. Corp., Baish 9, c nw nw 21-17s-32e	60	4145
Lea County (Mattix)—		
Addison Oil Co. Gulf, Knight 2, c sw nw 27-24s-37e	648	3560
Lea County (Penrose)—		
N. G. Penrose-Rowan & Nichols, Elliott 2-A, c ne sw 27-22s-37e	259	3665
Peters et al, T. O. May-Repollo 1, c nw ne 34-22s-37e	250	3700
Twin Oil Co., Corrigan-Amerada 1, c nw ne 4-22s-37e	256	3763
Lea County (Vacuum)—		
Magnolia, State-Bridges 6, c sw nw 23-17s-34e	142	4755
State-Bridges 9, c se sw 13-17s-34e	600	4682
Ohio, State-McCallister 1, c se sw 25-17s-34e	1500	4680

*Failures; †Junked; ¶Million cu. ft. gas.

Rocky Mountain Fields

Lance Creek Leo production extended mile southeast.

Kevin-Sunburst, Cut Bank fields brought closer together.

Casper, Wyo.—Extension of the Leo pool in the Lance Creek field, Niobrara County, eastern Wyoming, appeared for a certainty this week. Minnelusa Oil Company's H. & M. 1, NW NE NE 8-35n-65w, a mile east and five-eighths of a mile south of the nearest Leo production, cored 20 feet of saturated-lime section from 5491 feet to 5511 feet. Hole bottoms at 5515 feet below the lime break. There was no water. The 7-inch production string is set at 5497 feet.

Following a better-than-average Leo completion, Continental Oil Company is moving rotary onto Apex 5-OPC-3, NW NE NW 34-36n-65w, another inside location on the east side of the field.

The Ohio Oil Company started an important deepening job in the Little Pole Cat gas field, Park County; Trans-Ark 1, CSL SW SW 30-57n-98w, is deepening at 5339 feet headed for a first test of the Dakota horizon. The well was completed in 1923 by Transcontinental Oil Company for 5,000,000 cubic feet of gas daily at 3900-4200 feet in the Frontier under 1275 pounds rock pressure. When Ohio acquired Transcontinental properties in 1930, it laid an 8-mile 4-inch line to connect the gas well to Lovell-Powell gas line. Little Pole Cat is a small domal structure controlled in the Cody shale and along the Garland folding. Significant of the test is that if production in deeper sands is developed it will tend to prove the Big Pole Cat structure just to the northwest of Little Pole Cat. A good demand exists in the Big Horn Basin, principally a black oil producing region, for light oil and sweet gas, both of which may be expected in the Dakota sand. Black oil production is developed in the deeper Permian Pennsylvanian systems.

Seek Tensleep at Mahoney

A second important deep test is Sinclair-Wyoming Oil Company's projected well to the Tensleep at Mahoney dome, Carbon County, central Wyoming. This company is moving in rotary for Mahoney 3, CSE NW 34-26n-88w, which will drill to around 4500 feet for the Tensleep. One inconclusive test of the Tensleep has been drilled at Mahoney, and made a small oil well. Producers & Refiners Corporation in 1930 drilled the discovery, 330 feet south of the new location, and it completed for around 50 barrels daily from saturated sand at 4685-4760 feet. It was one of the first rotaries drilled in central Wyoming, and company had considerable mechanical difficulties. The well completed with part of tools in bottom of hole, and could never be properly cleaned or pumped for a production test. Mahoney Dome is large gas producer from the Frontier, Dakota, and Sundance sands. Approximately 6000 acres are within the proved gas pool. Immediately to the east of Mahoney on the same line of Lost Soldier and Ferris folding, are the East Mahoney Dome, West Ferris and Ferris fields. Mahoney Dome is 10 miles southeast of the Wertz field in which Sinclair-Wyoming Oil Company brought in a 1400-barrel discovery in the Tensleep formation a year and a half ago.

In the Allen Lake gas field, Carbon County, Ohio Oil Company this week abandoned A. J. Hazlett Estate 3, CNW SE NW 34-23n-79w, at 4362 feet still in the Tensleep section and drilling in 70 degree dip beds. The well topped the Tensleep at 3864 feet and had 50 barrels of water an hour at 3864-3894 feet. The company planned to deepen the well for the Madison before it drilled into the sharply turned Tensleep section.

Drilling Deeper

In the Big Medicine Bow field, Carbon County, Ohio Oil Company and The California Company, with Ohio as operator, is deepening Kyle 3, SW NE 26-12n-79w, for a deep test to the Tensleep. It is drilling at 6055 feet. This well completed for a comparatively small Medicine Bow well at 240 barrels daily on the pump at plugged depth of 5661 feet in the Sundance in October,

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MOUNTAIN STATES
Completions

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
Toole County (Kevin-Sunburst)—		
Ramona Oil Co., Government 1, nw ne nw 12-35n-3w	30	1585
WYOMING		
Converse County—		
E. B. Jones, O'Meara 1, nw se ne 17-32n-68w	*	790
Niobrara County—		
C. L. Price, John Lamb 4, cse sw 12-35n-66w	*	4830
Weston County (Osage)—		
Updike Bros., Fee 5, csl ne sw 25-46n-64w	35	1591
H. D. Wiltse, Fee 13, cel ne nw 17-46n-64w	4	280

*Failures; †Junked; ¶Million cu. ft. gas.

1937. It had backed away from lower Sundance water at 5765 feet.

In the Salt Creek field, Natrona County, Stanolind Oil & Gas Company is moving in rotary for another Tensleep well, Midwest Oil Company 8 T-P, CNW SW 35-40n-79w. Stanolind's Wyoming Associated Oil Company 26 T-P, C SE NW 35-40n-79w, is nearing critical depth, drilling at 3900 feet.

General Petroleum Corporation is drilling water well at 569 feet which will complete at 1100 feet to develop supply for State 1, C NW NE SE 16-35n-77w, Cole Creek structure, Natrona County. The second Cole Creek well, located a mile north of the inconclusive Cole Creek discovery, will be one of the most keenly watched tests under way in the Rocky Mountain division. Results in the second well will largely determine development of Cole Creek, and will pace further exploration seismic and drilling of possible buried structures within the huge Powder River Basin, great drainage area embracing the northeastern quarter of the state. The discovery well is pumping around 250 barrels daily from 8013 feet, Lakota sand. About 600 feet below the Lakota is the untested Sundance at Cole Creek.

In Niobrara County, Fall River Royalty & Producers Company's Government 1, S SE SE 35-40n-61w, is another Wyoming first report this week. Test is in the Mule Creek field and will drill for the Leo sand. It is drilling at 145 feet, and 18 feet of 24-inch conductor pipe has been set.

In the Garland field, Big Horn County, Joan Oil Company's north fault block extension, Howell 1, NW SE NE 32-55n-97w, is drilling at 2470 feet and carrying the 10-inch casing.

Resolute Oil Corporation's State 2, C SW SW 16-57n-101w, Badger Basin oil field, Park County, is drilling at 4518 feet. This hole will drill possibly to 9000 feet plus for a test of the Dakota series; Badger Basin produces from the Frontier at 8500 feet.

Projected for the untested Madison in the Big Lake field, Stillwater County, southern Montana, Indian Territory Illuminating Oil Company's Hepp 2, NWc NW 25-1n-2e, is drilling at 5156 feet.

Between Fields

Possible joining of the Kevin-Sunburst and Cut Bank oil fields, Montana's ranking fields in both production, area, and activity, was seen this week in the performance of G. H. Lund's Dahlen 2, C SE NW 35-35n-4w, an outpost in the twilight area almost midway between the fields. The well reported a completion three weeks ago of five barrels daily at 2056-57 feet in the Madison contact. Since, its production has increased to 12 barrels daily. Production is natural and the well has not been acidized. The Cut Bank field, one of the largest in the world from an areal standpoint is a long crescent shape, 35 miles in length and 6 miles in average width.

Three new operations got under way in the Kevin-Sunburst field, Toole County, this week. They are Kluth et al's Gunderson 1, SE SW SW 18-35n-2w, moving in; Fulton and Commonwealth Oil Company's Thompson 2, NW NE SW 28-35n-3w, cementing 12½-inch casing at 95 feet; and W. M. Cassidy's Phoenix 1, C NL NW NW 28-35n-4w, in the midway area to Cut Bank, rigging up.

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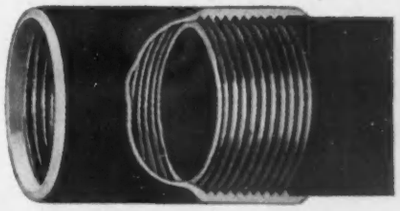

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IMPORTANT WILDCAT TESTS

CALIFORNIA

Los Angeles: Bellflower—George L. Clayton's Scott 1, 32-3-12, sd 6897 ft. **Castaic**—Royal Land's No. 1, 8-4-17, dr hard shale 950 ft. **La Mirada**—John McKeon's Carmenita 1, 21-3-11, sd 6000 ft. **Newholl**—National Petroleum's No. 1, 27-4-16, sd 2436 ft. **Palos Verdes**—Rollings Hills' Weston 1, 27-4-14, dr hard shale 4450 ft. **Pico**—British American's Pico 1, 12-2-12, sd 4568 ft. **Redondo**—Clifton's No. 1, 17-4-14, pumping 35 bbls oil and water 5500 ft. **San Fernando**—Tide Water Associated's Porter 1, 27-3-16, dr sand and shale 1600 ft. **Whittier**—Security Land's No. 1, 8-2-11, co 1550 ft. **Orange: Costa Mesa**—A. V. Oil's No. 1, 16-6-10, dr hard brown shale 4100 ft. **Kraemer** — Congress' Kraemer 1, 36-3-9, sd 3014 feet. **San Bernardino: Chino**—Southern Counties' Los Serranos 1, 22-2-8, dr hard shale 425 feet. **Fresno: Clovis**—Central Valley's No. 1, 1-12-20, sd 556 feet. **Coalinga**—Petroleum Securities' Grimes 1, 12-20-15, sd 514 ft. Same, No. 7-7F, 7-20-16, rur. Same, Gatchell 2, 18-20-16, producing 325 bbls daily, 6908 ft. Magnet's Fearon 2, 18-20-15, testing water shutoff 2780 ft. Medford's Goetz 1, 10-20-15, rur. Standard's No. 82-13-C, 13-20-15, foundation. Superior's Hight 1, 8-20-16, rig. Texas Co.'s Mohawk 19, 12-20-15, dr sand and shale 500 ft. Tide Water Associated's Guardian 33, 12-20-15, rur. Universal Consolidated's Leavitt-Hintze 1, 12-20-15, dr sand and shale 3700 ft. **East Coalinga**—Pure's SPL 1, 31-18-17, dr hard sand and shale 10,912 ft. **Jacalitos Hills**—Jacalitos Petroleum's No. 1, 14-21-15, dr hard shale 6100 ft. Dauphin Development's Boone 1, 30-21-14, may abd 3780 ft. Same, No. 1, 19-21-14, foundation. **Panoche Hills**—Panoche Hills' No. 3, 12-14-11, sd 300 ft. **Kern: Belridge**—F. E. Abbott's No. 1, 18-27-19, rig. Shell's Voight 4-1, 32-27-20, wocs 910 ft. **Buena Vista Lake**—Ohio's KCL A8, 32-31-26, wocs 11,186 ft. **Devil's Den**—Gibson's Alferitz 3, 14-25-18, dr shale 750 ft. George Goodrum's Baron 1, 24-25-18, sd 1210 ft. H. L. F. Oil's No. 1, 25-25-18, sd 88 ft. **Dominion**—Federal Drilling's Glide 1, 13-26-28, rur. Master Petroleum's US 1, 34-26-28, grade. **Edison**—G. W. Johnson's Brown-Paulette 1, 33-29-30, dr schist 1150 ft. Ray W. Stevens' No. 1, 22-30-30, dr sand and gravel 1010 ft. **Elk Hills**—Richfield's KCL-Western 1, 32-30-25, building rig. **Fruitvale**—Texas Co.'s Camp-West-Lowe 1, 7-29-27, dr hard shale 7040 ft. Continental's KCL B-2, 12-29-26, dr sand and sandy shale 4644 ft. **Grapevine-Wheeler Ridge**—Petrol's Reserve Petrol 33-5, 33-11-19, sd 4607 ft. Richfield's KCL 1, 28-11-20, dr hard brown shale 5161 ft. Wilshire's Tejon 34-1, 34-11-19, rig. **Kern River**—Amerada Petroleum's Olcese 1, 4-29-29, lcn. **Lerdo**—Standard's KCL 18-1, 29-28-26, dr hard shale 10,100 ft. **McFarland**—Tide Water Associated's Pond 1, 17-26-25, dr sand and shale 7447 ft. Shell's KCL 83-35, dr sand and shale 9475 ft. **McVan**—Bargol's Claflin 2, 10-27-27, sd 2169 ft. Desert Glow's No. 3, 14-27-27, rig. Framac's Brown 3, 22-27-27, wocs 1355 ft. **Poso Creek**—Harkness & Laws' Hunt 1, 28-27-27, foundation. Reynolds' No. 1, 30-27-27, sd 2854 ft. **Richgrove**—Dilamar's Quinn 1, 15-25-27, running rods to resume, dr 2956 ft. **San Emigdio**—Shell's KCL 1-A4, 26-11-22, redrilling 9737 ft, td 9824 ft. **Strand**—Continental's KCL E-1, 17-30-26, sd 8574 ft. **Temblor Hills**—Chico Martinez's Holly 1, 1-29-20, potential 47 bbls daily 1108 ft. **Union Avenue**—Richfield's Union Avenue 1, 6-30-28, lcn. **Wasco-Semitropic**—Continental's KCL A-3-8, 8-27-24, dr shale 10,500 ft. Same, Seaboard-Assoc. KCL C-1, 26-27-24, dr hard shale 12,632 ft. Standard's Mushrush 1, 7-27-24, wocs 7503 ft. Same, KCL 8-B-1, 17-27-24, dr sand and shale 10,100 ft. **Kings: Alpaugh**—Tri-Counties' Olson 1, 10-23-32, dr sand and shale 7200 ft. **Dudley Ridge**—Falcon Oil's Josephine 2, 24-23-20, sd 6944 ft. **Pyramid Hills**—Pyramid Production's Retherford 1, 27-24-18, sd 3090 ft. **Tulare: Alpaugh**—Sullivan & Youngdahl's No. 1, 33-23-23, sd 2732 ft. **Ducor**—Nelson & Davison's Muller 1, 1-24-27, sd Flores 1, 27-9-33, dr hard broken shale oil in 378 ft. **Trico**—Caminol's A.O.G. 3, 29-24-24, rur 7555 ft. **Santa Barbara: Carpinteria**—Carpinteria's No. 1, 32-4-25, repairing machinery 2458 ft. **Carreaga**—Douglas-Stratton's No. 1, 8-8-33, pumped water trace of oil 6239 ft. **Casmalia-Cat Canyon** — Standard's Los fractures 5447 ft. **Coal Oil Point**—South Crude's Permit 191-2, 24-4-29, sd 5510 ft. **Gaviota**—Gaviota Oil's Hollister 1, 35-5-33, recementing 3215 ft. Wilshire's Hollister 1, 35-5-33, sd 4600 ft. **Gato Ridge**—Barnsdall's Magenheimer 5, 9-8-32, rig. Same, Tognazzini 3, running liner 3800 ft. Petrol's Magenheimer 5-11, 9-8-32, rur. **Lompoc**—J. E. O'Donnell's Helen 1, 8-7-33, sd 3580 ft. **Los Olivos**—Continental's La Laguna 2, 25-8-31, lcn. United Western's Bradley 1, 15-7-30, sd 3279 ft. **Orcutt**—Warren Deuel's Garrett 1, 12-9-34, rig. **San Luis Obispo: Elkhorn**—California Petroleum's Job 1, 6-10-24, dr gray sand and shale 1960 ft. Western Plains' Bell 1, 7-31-21, sd 4010 ft. Same, Bell 2, 2-32-21, sd 2620 ft. **Edna**—Loma Grande's Luis 1, 28-31-13, rig. **Huasna**—Hancock's Scherer-Dickes 1, 30-12-33, drill pipe frozen 2150 ft, td 4684 ft. **Pismo**—Fred Roberts' Scott 1, 5-32-13, sd 4624 ft. **Ventura: Moorpark**—Darby's A. B. Cohn 1, 7-2-19, sd 3630 ft. **Oxnard**—Walter G. Rowe's L. Johnson 1, 15-1-22, sd 4705 ft. **Ojai**—High Mesa's Butcher 1, 16-4-22, fsg bailer 1710 ft. Holly Development's Macrate 1, 27-4-23, dr gray shale 2920 ft. **Sespe**—Claran's Hardison 1, 22-4-20, sd 410 ft. Esbro's Metro Grande 10, 6-4-19, sd 2612 ft. Garmack's Orcutt 1, 28-5-19, sd 565 ft. La Salle & Van Diessen's No. 1, 17-5-19, grade. H. A. McDonald's No. 1, 5-5-19, lcn. Charles R. McKinnis' Cosley 1, 14-4-19, repairing equipment 165 ft. Merchants' Cochrane 8, 1-4-20, dr shale 685 ft. St. Louis' Williamson 1, 1-4-20, co 420 ft. Sespe's No. 1, 1-4-20, sd 2650 ft. Speik's Speik 1, 33-5-19, sd 3440 ft. George Terry's No. 1, 23-5-20, sd 1340 ft. **South Mountain**—Albatross' Scheiferle 1, 17-3-20, rig. Clipper's Calco 1, 17-3-20, rig. Texas Co.'s Yale Richardson 5, 13-3-21, fsg 2508 ft, td 6125 ft. **Tar Creek**—Section 20 Oil's No. 1, 20-5-19, r 1690 ft. **Timber Canyon**—J. W. Martin's Arnett 1, 15-4-21, dr hard shale 1215 ft. Stallings, Senter & Ahlburg's Stallings 1, 24-4-21, pumping small amount oil 1422 ft. **Ventura**—Ventura Drilling's No. 1, 10-3-23, lcn.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*
‡—*salt water (completions).*
†—*junked and abandoned.*
¶—*million feet of gas.*
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
bs—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg—*fishing.*
ft—*feet.*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*show oil.*
so&g—*show oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wosr—*waiting on standard rig.*

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FLORIDA

Levy—Fla. Oil Discovery Co.'s Sholtz 2, sw sw ne 9-15s-13e, dr 3266 ft chalky limestone, strks blue shale last report. **Nassau**—St. Mary's River Oil Corp.'s Hilliard Turpentine Co. 1, nw nw se 19-4n-24e, elev 110 ft, 6⅝-in csg 3935 ft, dr 4510 ft last report. **Polk**—Edw. A. Hill's Polk County Lbr. Co. 1, nw nw ne 32-25s-25e, dk. **Suwannee**—Wm. G. Blanchard's Lucy Cotton 1, se ne 35-3s-11e, elev 70 ft, sd for heavier rig, td 200 ft. J. W. Phillips Oil Explorations' Shilkett 1, nw nw 14-4s-14e, dk.

ARKANSAS

Calhoun—C. E. Murdock's Southern Kraft 1, se nw nw 17-14-13, spd & sd cur titles. **Crittenden**—Stanley Oil Corp.'s D'Annar Hrs. 1, c 18-8n-9e, top paleozoic 3243 ft, sd 3331 ft. **Cleveland**—W. E. Allaun Tr.'s Moore Est. 1, sw se nw 34-9-10, rur. **Clay**—Canadian American Oil Co.'s Smith 1, c ne nw 9-20-8, elev 375 ft, top Nacatoch 800 ft, sd 1005 ft shale. **Craighead**—Tenn. Ark. Inc.'s Ruby Martin 1, ne ne 35-14n-3e, dr 1902 ft hd rock. **Columbia**—J. A. Longino's Baker 1, se nw nw 13-17-20, mim. E. O. Olds' Mary Dennis 1, nw se sw 4-17-21, owdd, td 4513 ft. G. H. Vaughn & Shell's Garrett 1, c ne se 12-17-20, spd. Standard of La.'s Tina Crumpler 1, c sw nw 15-17-19, top chalk 2391 ft, set 9⅝-in csg 2408 ft, dr 6239 ft shale & sand. Harris Unit 1, c ne sw 15-17-19, dk & mir. Fohs Oil Co.'s Phillips 1, nw nw sw 15-17-19, dr 7203 ft shale & sand. Atlantic Ref. Co.'s Harrington 1 (was M. Talley 1), c sw nw 14-17-20, spd. M. Talley 2, nw sw 14-17-20, lcn. Baker 1, 2, 3 & 4, se ne, sw ne, sw nw, nw ne 14-17-20, lcns. Petroleum Finance Corp. of Texas' Allice Baker 1, c sw nw 13-17-20, lcn. Barnett 1, c nw se 14-17-20, lcn. **La Fayette**—Standard of La.'s Warren 1, c ne ne 18-16-22, top Nacatosh 1418 ft, top anhydrite 3279 ft, dr 6575 ft shale & sand. J. P. McKean 3, se ne se 7-16-22, dr 5365 ft lime. **Little River**—J. G. Strahan's Dierks Lbr. Co. 2, sw se 21-12-28, elev 268 ft owdd, top lime 2421 ft, sd 3030 ft. **Lonoke**—J. W. Eddington et al's Anderson 1, nw ne 7-4-9, 12-in csg 85 ft, sd 600 ft. Cabot Drlg. Co.'s Benson 1 (Cabot townsite lcn), sd 1815 ft. J. E. Russell's Gunter 1, se se 17-5s-10w, no report.

Miller—F. F. Earles' General American 1, se sw 20-14-26, sd 1232 ft. Ray L. Estabrook et al's E. L. Sherman 1, sw sw 29-19-28, dr 4537 ft. **Pulaski**—Coker Oil Corp.'s M. S. Stone 1, sw ne se 36-3n-11w, 12½-in csg 108 ft. **Union**—Joe Modisett et al's Frost Lbr. Co. 1, ne ne 8-18-12, 9⅝-in csg 3307 ft, dr 3680 ft hd shale.

ILLINOIS

Bond—Farrely's Kyle 1, sw nw nw 28-4n-4w, sd 740 ft. Levitt et al's Briggs 1, sw se ne 24-4n-2w, dr 500 ft. Huppard et al's Dresser 1, sw ne nw 21-6n-4w, dr 1535 ft. **Clay**—Gordon et al's Cannon 1, c nw se se 32-3n-5e, to dd, td 2803 ft. **Clinton**—Schlafly's Brinkman 1, ne ne nw 31-1n-1e, ur, td 1353 ft. Phelps' Dodillet 1, se nw sw 25-1n-1w, sd repairs, td 1109 ft. Haussman et al's Nothaus 1, nec 23-2n-2w, ru. Wilson et al's Goesling 1, c w nw se 352-2n-2w, dr 1300 ft. Fagerburg et al's Quinz 1, se ne nw 27-2n-1w, dr 650 ft. Sappington et al's Hilgerman 1, se ne nw 22-3n-3w, ur td 800 ft. **Crawford**—Hastings et al's Athey 1, c ne ne ne 18-8n-12w, dr 2815 ft. **Dewar**—Leach Bros.' Lee 1, sw ne se 11-1s-10e, may acidize, td 3370 ft. **Fayette**—McBride's Stokes 1-B, c se se sw 19-8n-3e, lcn. Penn-Illinois' Niehoff 1, nw ne nw 24-8n-4e, sd 2700 ft. Lacey's Buzzard 1, c sw ne se 34-9n-3e, abd 1682 ft. **Effingham**—Minerva's Vercruyse 1, c nw se se 4-7n-3e, sd 1512 ft. Schroeder et al's Smith 1, c ne ne ne 30-7n-3e, dr 750 ft. Continental's Eveland 1, nec 33-7n-9e, mit. Kingwood et al's Harrison 1, c sw sw 2-7n-10e, dk. **Gallatin**—Siegel et al's Cheisser 1, ne nw nw 5-8s-7e, sd repairs, td 100 ft. **Marion**—Cole et al's Kuester 1, e½ e½ sw sw 5-1n-1e, dr 850 ft. Thompson's Wright 1, c ne se ne 8-1n-1e, dr 300 ft. Parshall-Graham's Shook 1, c ne se ne 9-1n-1e, spd. Williams et al's McCray 1, nw nw se 24-1n-1e, cor, td 1407 ft. Lane et al's Bailey 1, c nw nw 30-1n-1e, ur, td 1595 ft. R. E. Dalton's Dalton 1, nw se ne 19-1n-3e, dr 1475 ft. R. E. Dalton's Clifton 1, ne sw sw 15-1n-4e, sd 2682 ft. Morrison's Rittinghouse 1, sw ne se 19-2n-1e, dr 1300 ft. Coyer's Mulvaney 1, se ne 6-2n-4e, rust. Marion's Wilson 1, ne ne se 18-3n-3e, dr 2150 ft. **Richland**—Shamrock's Alvord 1, c sw se ne 33-3n-9e, cellar. **Saline**—Bailey et al's Logan 1, se ne ne 21-8s-8e, dr 350 ft. Bolton's Beagle 1, nw nw ne 13-9s-7e, sd 2610 ft. Whitlock et al's Anthis 1, nw nw ne 12-11s-5e, sd 1730 ft. **Shelby**—National Consumer's Harrison 1, ne se ne 17-9n-9e, ur td 800 ft. Jolly et al's Jenkins 1, sec 26-10n-4e, dr 900 ft. **Washington**—Gulf's Wilson 1, c e ne ne 30-1s-15e, dr 3230 ft. Bitterman's Bonk 1, c se ne sw 16-3s-2w, cellar. Dee et al's Hamilton 2-A, sw sw nw 20-4s-3e, dk. **Wayne**—Pure's Billington 1, c e se se 23-1n-7e, dr 3115 ft. Gordon et al's Fitch 1, c w sw nw 11-1n-8e, lcn. **White**—Arab's Doerner 1, sec 12-7n-8e, dk. **Williamson**—Geological Synd.'s Scott 1, sw se sw 4-10s-2e, dr 1200 ft.

KANSAS

Barton—Gardner et al's Krug 1, sw se 16-16-13w, sd 1780 ft. Carlock et al's Demel 1, ne nw 30-17-13w, lcn. **Butler**—Hicks' Heymon 1, nw sw nw 33-23-5e, mim. Simpson's Equitable Life 1, swc 15-25-3e, dr 800 ft. Steinbuschel et al's Fox 1, nw se ne 25-26-3e, co 2980 ft. Fred Phillips' Hanshaw 1, ne ne se 32-27-3e, lcn. National's Wentz 1, se ne nw 7-27-6e, dr 1425 ft. Seighoff et al's Eckel 1, sec 17-27-7e, rig. Solomon et al's Sawyer 1, sw nw sw 2-28-7e, spd and sd. Heilman et al's Sawyer 1, se ne ne 10-28-7e, woc td 2737 ft. Pryor & Lockhard's Lietzke 1, nw sw nw 24-28-7e, cellar. **Cowley**—Smith et al's Wilson 1, se sw nw 9-33-6e, co td 3110 ft. **Dickinson**—Franks et al's Huffman 1, nw sw 11-13-1e, sd 1177 ft. **Ellis**—Carter's Gootschalk 1, nw se 36-15-18w, woc 1062 ft. **Geary**—Midland's Ofeller 1, c nw nw 6-12-5e, lcn. **Graham**—Schlemeyer's Belveal 1, c se nw 3-8-24w, dr 2940 ft. **Greenwood**—Nichols et al's Central Life 1, se sw 35-25-12w, ru. Fullerton et al's Bates 1, ne sw se 32-26-11e, ru. Smalley et al's Samples 1, se nw ne 15-26-13e, ur td 1540 ft. **Kingman**—Brunte Bros.' Shepard 1, sec 10-27-10w, dr 550 ft. **Marion**—Johnson et al's Miltz 1, swc 24-17-4e, co 1460 ft. Harwood's Kaufman 1, nw nw se 27-17-4e, ru. Progressive's Evans 1, se sw se 33-22-3e, dr 1425 ft. **Meade**—Pacific Midwest's Rexford 1, ne se sw 8-30-29w, sd 730 ft. **Ness**—Mid-Continent's Collins 1, nwc 24-20-26w, dr 3870 ft. **Ottawa**—Babcock's Copeman 1, c nw ne 18-10-2e, dr 650 ft. **Riley**—Coronado's Parks 1, se se 16-10-8e, dr 1525 ft. **Rooks**—Power's Hammond 1, c sw 34-6-19w, rig. Haines et al's Dorr 1, se sw 13-9-16w, dr 2410 ft. Hall's Kruse 1, se ne 3-10-16w, woc td 3124 ft. **Russell**—Smith's Stielow 1, nw nw 32-11-14w, sd 2552 ft. Phillips' Miller 1, c nw sw 29-13-14w, oil show td 3311 ft. Coralena's Hefferman 1, ne se sw 34-14-13w, pb 2936 ft otd 3020 ft. Hinkle et al's Kaufman 1, se nw 10-15-12w, ru. Shields' Rogg 1, c el w nw 9-15-13w, dr 2535 ft. Southern's Letsch 1, ne sw sw 17-15-13w, rng 7-in csg td 3230 ft. **Sedgwick**—Hutton's Phillips 1, nw ne se 14-26-1w, rig. National's Trustee 1, se ne 8-27-2e, dr 3115 ft. Hudson et al's Fulton 1, ne se 35-18-1e, sd 2283 ft. Crowe et al's Murphy 1, sw se 34-29-1w, rig. **Stafford**—Cities Service's Smith 1-B, c wl sw 16-21-11w, sd 2610 ft. Western Kansas' Barnes 1, nwc 8-21-13w, dr 3550 ft. Boons et al's Schilling 1, nw ne 20-21-12w, cellar. Atlantic's Wise 1, nwc 13-24-14w, dr 2200 ft. **Woodson**—Cyr Gas et al's Schreiber 1, se sw se 8-25-14e, sd 1265 ft. Trott's O'Neal 1, sec 21-25-14e, dr 1475 ft.

NORTH LOUISIANA

Bienville—DeSoto O. & G. Co.'s Wm. Ashley 3, c nw se 15-16n-10w, rog. Mrs. B. A. Fleming 1, nw nw 18-16n-9w, dr 1610 ft. Gulf's Goodpine Oil Co. 1, se sw 25-14n-8w, elev 157 ft, massive anhydrite 5303-5420 ft, top lower Marine 9650 ft, dry abn td 10,951 ft. **Bossier** Lloyd & Sloan's B. A. Sherrill 1, se se 12-19n-12w, sd 785 ft. **Caddo**—R. E. Allison et al's Ellerbe et al 1, sw nw 27-18n-14w, elev 173 ft, 13⅜-in csg 229 ft, 9⅝-in csg 2048 ft, top red beds 2448 ft, top anhydrite stringer 4070 ft, massive anhydrite 4332-4610 ft. Completed flowing 499 bbls oil first 24 hrs after perforating 5548-68, td 6025 ft. Oils Inc.'s A. Cazaux 1, sw sw 16-16n-13w, 10-in csg 300 ft, sd 1400 ft. Hutchinson Bros.' Fee 2, 3-15n-12w, dr 1755 ft. **Caldwell**—Oakes et al's Kyles 1, sw ne 18-11n-3e, woc 470 ft. **Catahoula**—G. E. Foster et al's W. S. Peck 1, c s½ 39-10n-8e, sd 620 ft. **Claiborne**—E. T. Oakes et al's Kilgore 1, ne se 28-21n-5w, elev 288 ft, 5¾-in csg 5290 ft, logged saturated lime 5297-5305 ft, and 5307-12 ft, swabbing 4300 ft, oih td 5357 ft. Union Prod. Co. et al's Rufus Sims A-1, sw sw 29-20n-5w, cored sand so 5612 ft (Travis Peak), arr core again td 5612 ft. J. N. Buchanan's Miller Est 1, ne sw 11-20n-8w, rur. DeSoto—S. S. Alexander's Stell 1, ne ne 5-12n-16w, elev 245.6 ft, flowed oil with sw after perf in Glen Rose, tested dry when perf at 4110 ft, shot csg at 3400 ft, so, sw abn td 6002 ft (sec completion), arr skid 75 ft south for new hole. S. P. Taylor's Barnhart 1, ne se 20-14n-12w, mir. M. L. Stephens' M. E. Garrett 1, nw ne 10-11n-16w, mim. La. Seaboard's Lawrence 1, sw ne 36-12n-14w, elev 332 ft, tested so 2062 ft, tested dry 2822 ft, arr deepen. G. H. Collins et al's Joyner 2, sw ne 28-11n-12w, running csg td 2925 ft. **Grant**—C. L. Thompson et al's Woodward 1, ne sw 10-6n-3w, top Wilcox 2867 ft, install heavier rig, td 4527 ft, sandy shale. C. R. Bowers et al's Harrison 1, ne sw 21-8n-5w, dr 1110 ft, shale & bldrs. **Madison**—Continental Oil Co.'s Singer Mfg. Co. 1, n½ ne nw 3-15n-11e, sr 1740 ft. **Morehouse**—Hunter & Rowe's E. M. Clarke 1, sw ne 10-20n-7e, elev 103 ft, top lime 6218 ft, temp abn, td 7022 ft. **Natchitoches**—Joe. E. Popkins' Peavy-Wilson 1, nw nw 36-7n-9w, sd 300 ft.

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W. T. Ryan et al's Lambert 1, nw nw 4-8n-9w, sd 4189 ft. Raines Bros.' Allen Plantation 1, ne sw 22-10n-9w, fsg 1250 ft. **Rapides Parish**—J. J. Farrell's Certner 1, nw se 16-4n-1e, dk. E. F. Kalb et al's Lee Lbr. Co. 1, nw sw 9-5n-3e, dk & mir. Texas Co.'s Weil 3, 53-1s-2e, dry abn td 8565 ft. **Red River**—Glassell & Whitehurst's LeLong 1, ne nw ne 26-12n-11w, sd 3113 ft. W. J. Hunter's Long-Bell 4, se se 30-30-13n-9w, dr 1010 ft. **Sabine**—W. L. McClanahan et al's Frost-Johnson 1, se ne sw 22-9n-13w, elev 196.2 ft, top Nacatoch 1531 ft, top Saratoga chalk 1578 ft, Annona chalk 1816-2041 ft, Austin chalk 2854-3007 ft, top Glen Rose 3286 ft, blew out gas, so 4745 ft, dr 5299 ft, shale & lime. H. M. Sneed et al's Leone 1, nw se 8-7n-13w, rur. J. G. Sutton-Zwolle Oil Co.'s Bowman-Hicks 1, w½ sw se 14-7n-14w, dr 1480 ft. Bowman-Hicks 2, w½ sw nw 24-7n-13w, lcn. Albert Reich et al's Glaque 1, ne se ne 27-7n-14w, repr shaft td 4016 ft. F. W. Martin & Co.'s Sabine 2, c e½ ne ne 23-7n-14w, lcn. Lee Whitehurst et al's Bowman-Hicks 1, se se 14-7n-14w, top chalk 2105 ft. A. Boykin King's Sabine 1, c nw nw 19-7n-13w, sd 4517 ft, may deepen to 6000 ft. Sabine 1-A, c w½ nw nw 19-7n-13w, lcn. Sabine 2, c sw nw 19-7n-13w, lcn. Zwolle Synd.'s Mansfield Hdw. Lbr. Co. 1, ne ne 8-7n-14w, killing fresh water flow 560 ft. Tropical Oil Co.'s (was Quality Prod. Co.) Long-Bell Lbr. Co. 1, se se 5-8n-13w, woc surf csg. **Union**—Joe Modisett et al's Frost Lbr. Co. 1, ne sw 14-21n-1e, elev 188 ft, top lower Marine 6161 ft, top pink anhydrite 9060 ft, top Permian lime 9612 ft, dry abn td 9983 ft, sand with taste of salt. Standard of La.'s Frost Lbr. Co. 1, c sw sw 13-23n-2w, lcn. **Webster**—W. M. Chambers' Thomas 1, se se 11-22n-11w, ru & sd. Magnolia's Pardee Co. 1, ne nw ne 17-23n-11w, elev 203 ft, top Blossom 2665 ft, tested 17 joints sw 16 min dst 2664-73 ft, dr 4326 ft. H. M. Branton 1, ne ne 6-22n-9w, rur.

SOUTH LOUISIANA

Calcasieu—Republic's Sabine Tram 1, nw of Starks, 25-8s-14w, preparing to abn 9540 ft. Union Sulphur's Drew Training School 1, s of Edgerly, 4-10s-11w, dr shale 8182 ft. **Cameron**—Humble's K. Hanszen 2, Chalkley area, 9-12s-6w, dr shale 9276 ft. Pure's Calcasieu National Bank 1, n of Mallard Bay, 18-12s-4w, sd 8293 ft. **Iberia**—Texas Co.'s State 2-B, Vermilion Bay, 16s-5e, conditioning mud 9667 ft. **Jefferson Davis**—Continental's J. Sturdivant 1, South Roanoke, 36-10s-4w, dr shale 10,333 ft. Union Sulphur's Liggett 1, Fenton area, 36-7s-5w, dr shale 6798 ft. **Lafourche**—Sun's Dibert, Starks & Brown 1, Chacahoula dome, 70-15s-15e, dr shale 5309 ft. Texas Co.'s La Terre Co. 1, Golden Meadows area, 1-20s-21e, dr water sand 7540 ft. **Orleans**—W. T. Burton's State 1, in Lake Pontchartrain, 10s-13e, fsg 5443 ft. **St. Bernard**—Gulf's State RR 3, Lake Borgne, 6-12s-15e, washing to bottom 10,278 ft. **St. James**—Continental's Colonial Sugars 1, Convent, 46-12s-5e, dr shale 7163 ft; same operator's Realty Operators 1, Convent, 17-12s-5e, fsh 7499 ft. **St. John the Baptist**—Shell's Godchaux Sugars 1, La Place, 97-11s-7e, dr shale 7148 ft. **St. Martin**—Shell's Jeanerette Lbr. Co. 1, West Lake Verrett, 14-14s-12e, dr hard sand and shale 10,119 ft. Texas Co.'s St. Martin Land 11, Henderson, 21-8s-7e, dr shale 8017 ft; same operator's State 6, Lake Mongouloui, in Lake Mongouloui, 10-10s-9e, woc 1240 ft. **Terrebonne**—Barnsdall's Barrow Estate 1, n of Bourg, 41-17s-18e, dr shale 9870 ft. Fohs' State Bay Baptiste 1, se of Lirette, 41-19s-19e, testing 11,178 ft. Shell's Peters 1, se of Houma, 73-18s-18e, dr sand 8666 ft; same operator's Realty Operators C-1, Minor area, 10-18s-16e, dr shale 10,338 ft. Texas Co.'s Sate Coon Point 1, Caillou Bay, 22s-14e, dr surface 800 ft. **Vernon**—W. T. Burton's Gulf Lbr. Co. 1, Fullerton area, 15-1n-6w, dr shale 6029 ft.

MICHIGAN

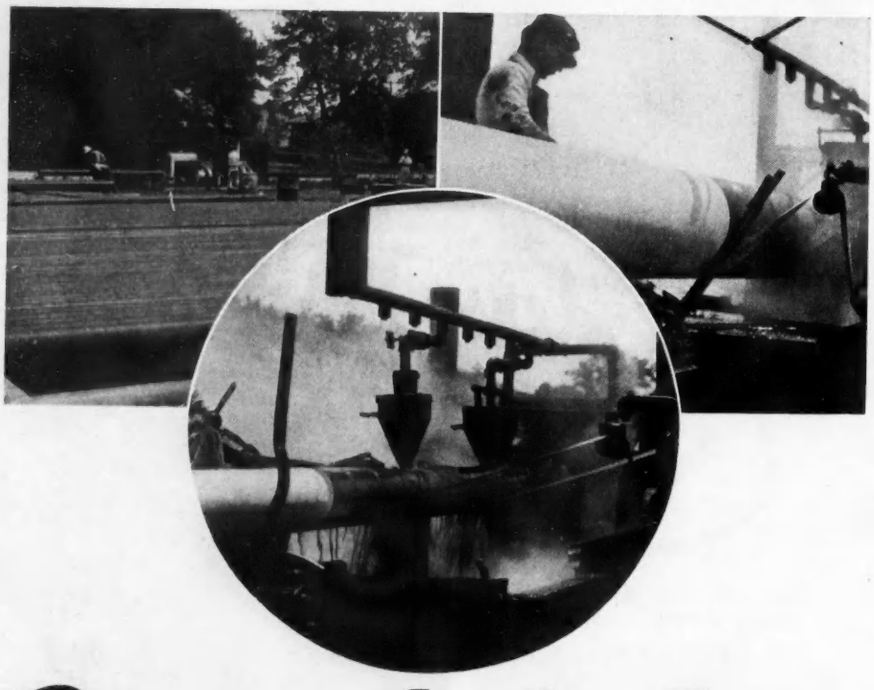
Allegan—Caldwell Inc.'s Gosling 1, 10-4n-12w, fsg 1450 ft. Sutherland's Klein 1, 10-3n-14w, dr 1490 ft. Hubbel's MacVean 1, 19-2n-11w, dr 1350 ft. Miller Brothers' Wood 1, 3-1n-12w, rig. **Arenac**—Tamblyn's McFarlan 1, 34-20n-3e, dr 800 ft. **Barry**—Associated's Natzel 1, 4-2n-9w, sd 1786 ft. **Cass**—Obenauer's Neel 1, 6-5s-14w, dr 450 ft. **Clare**—Gulf Ref. Co.'s Ann Arbor 1, 21-18n-5w, dr 3000 ft. **Gladwin**—Brehm Oil Co.'s Kitchen 1, 20-19n-1w, dr 300 ft. **Gratiot**—Lakeland Refiner's Munson 1, 26-10n-3w, dr 390 ft. Victory & Rex's Thum 1, 13-10n-4w, dr 2560 ft. Michigan Chemical Corp.'s Fee 9, 24-12n-3w, dr 3100 ft. **Huron**—Leonard Prospecting Co.'s Milling Co. 1, 10-16n-15e, ur 2100 ft. **Isabella**—Turner Pet. Corp.'s White 1, 28-16n-3w, dr 1700 ft. **Mackinac**—Van Kuren's Hiawatha 2, 27-44n-9w, dr 410 ft. **Macomb**—New Haven Oil Co.'s Schultz 1, 22-4n-14e, dr 300 ft. **Mecosta**—Daily Crude Oil Co.'s Thrush 1, 25-16n-7w, 10-in 640 ft, dr 735 ft. **Midland**—Sun Oil Co.'s State B-1, 9-15n-1w, Dundee 3672 ft, Monroe 3830 ft, so & g 4642 ft, dr 4665 ft. **Missaukee**—C. W. Teater's Gray 1, 32-23n-5w, sg 1095-1108 ft, dr 1400 ft. Moser Oil Co.'s Scherenhelm 1, 36-23n-7w, dr 1300 ft. **Monroe**—Sun Oil Co.'s Clampitt 1, 28-8s-6e, dr 2100 ft. **Montcalm**—Rex Oil Co.'s Hansen 1, 19-11n-8w, dr 1290 ft. Taggart's Jacks 2, 7-12n-9w, dr 1550 ft. **Osceola**—Champion's Ealy 1, 30-20n-8w, fsg 300 ft. **Otsego**—Snow Trustee's Moore 1, 13-29n-2w, wocs 8-in 1200 ft. **Ottawa**—Carcallen's Copp 1, 9-8n-15w, rig. **Shiawassee**—Buzard's McCall 1, 11-6n-3e, dr 200 ft. **Wayne**—Bellville Oil Co.'s Scheffler 1, 26-3s-8e, dr 2765 ft. Schrack's Fee 1, 17-22n-9w, sd 3918 ft.

MISSISSIPPI

Calhoun—L. C. Lucas' B. C. Boland 1, sw sw 9-22n-9e, spd woc surf csg. S. & O. Properties Inc.'s G. C. Cooner 1, se ne 12-24n-8e, sd 2120 ft. **Claiborne**—Claiborne County Dev. Co.'s Ruth Hayden 1, s½ se 55-11n-2e, rur to deepen td 2950 ft. **George**—Cleve Love et al's J. J. Newman Lbr. Co. 2, c sw 9-1s-8w, elev 111 ft, 10-in csg 1374 ft, top Het 1382 ft, installing new rig td 1400 ft. **Hinds**—Cleve Love et al's Montgomery 1, sw se se 28-6n-4w, lcn. S. F. Johnson 1, ne se 29-6n-1w, elev 343 ft, top black shale 3040 ft, top chalk 3097 ft, top Eutaw 3617 ft, top red beds 3657 ft, 7-in csg 3355 ft, sd 3707 ft. Progressive Realty Co. 1, se sw 35-6n-4w, top Wilcox 2750 ft, dr 6276 ft black shale. G. Jeffries' Gaddis Farms Inc. 1, nw se 26-7n-4w, spd. **Lamar**—Southern Miss. Pet. Corp.'s Morris 1, nw se 4-2n-14w, elev 332 ft, top Het 1138 ft, 10-in csg 1144 ft, top Vicksburg 1615 ft, top Minden lime 2123 ft, top Wilcox 2735-53 ft, sd 3029 ft (Wilcox). **Montgomery**—Dr. T. A. Chichester et al's E. C. Mitchell 1, se nw sw 30-20n-7e. **Pontotoc**—Waldrop, Melvin & Waldrop's Bray 1, sec n½ sw 17-11s-1e, set surf csg 166 ft. **Simpson**—Goodwill O. & G. Co.'s Berry 1, se sw 33-2n-4e, elev 307 ft, sd 2810 ft gray gumbo. Cleve Love et al's N. E. Garner 1, sw ne 1-10n-17w, woc surf csg. **Yalabousha**—Acme Holding Co.'s Boyle 1, nw nw 33-25n-7e, dr 2010 ft sandy shale (last report).

OKLAHOMA

Atoka—Shelton et al's Lee 1, ne nw sw 2-4s-10e, dr 3365 ft. **Cleveland**—Hollenbach et al's Mantooth 1, nwc 24-6n-1e, rig. **Coal**—Carter et al's Mote 1, c e sw nw 19-2n-9e, dr 5400 ft. **Choctaw**—Ross et al's Hardy 1, se se nw 21-7s-15e, dr 1110 ft. **Comanche**—Midnite's Howe 1, nwc 20-2n-13w, dr 450 ft. **Garfield**—I.T.I.O.'s Kichin 1, c se se 17-22n-5w, dr 4300 ft. Champlin's Boehm 1, sw sw ne 4-24n-8w, dr 2300 ft. **Garvin**—First National's Butterly 1, ne ne se 22-1n-1e, dr 2860 ft. **Jefferson**—Bridwell's Seay 1, se sw nw nw 29-6s-5w, dr 1925 ft. **Hughes**—Amerada et al's Conard 1, ne nw sw 33-10n-10e, rur. **Kiowa**—Hughes et al's Fultz 1, sec 10-6s-18w, fsg td 1186 ft. Anderson & Prichard's School Land 1, c se se se 14-6n-17w, dr 1525 ft. **Lincoln**—British American's Markwell 1, c e½ e½ ne 26-12n-4e, rig. Indian States' Bailey 1, nw nw ne 2-12n-5e, dr 3910 ft. **Logan**—Superior's McCulley 1, c w nw nw 26-16n-4w, dr 6125 ft. **Love**—Sin-



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clair Prairie's Peabody 1, ne ne ne 36-6n-2w, fsg 4020 ft. **Noble**—Hollenback et al's Mathews 1, c sw nw 9-20n-1e, woc td 210ft. Big Chief's Hoy 1, se se sw 33-21n-2w, sd to recmt surface csg td 4250 ft. Texas Canadian's Shultz 1, nec 29-23n-1w, dr 2850 ft. **Oklahoma**—Fain et al's Little 1, sw sw ne 28-11n-3w, dr 4900 ft. Olson et al's Vaneck 1, sw sw nw, dr 4910 ft. **Okmulgee**—Manhanan's Kennedy 1, ne nw ne 31-14n-11e, dr 2680 ft. **Osage**—Chevelier et al's Osage 1, nwc 33-27n-5e, dr 3200 ft. **Pawnee**—Sinclair Prairie's McQuain 1, ne nw ne 22-19n-1e, rur. **Pontotoc**—Union's Abbott 1-A, sw nw ne 34-3n-6e, recmt csg td 2015 ft. Moore's Payne 1, sw nw se 16-4n-4e, sd 200 ft. Lynch et al's Parker 1, sw sw se 27-4n-8e, to pb 400 ft, td 4485 ft. Pierce et al's Kroeger 1, se ne sw 30-5n-7e, rig. **Pottawatomie**—Farmers Mutual's Waite 1, ne ne nw 9-5n-5e, to re plug td 3200 ft. Speers et al's Vinson 1, sw nw sw 29-8n-5e, ru. Pace et al's Riley 1, ne ne se 2-9n-3e, ru. **Seminole**—Indian States et al's Johnson 1, ne se ne 2-6n-5e, sd td 3004 ft, Pure's Lack 1, se sw nw 3-6n-5e, sd td 4270 ft. Denver's Mathis 1, sw nw sw 7-6n-6e, to reacidize td 3842 ft. Southern's Rainey 1, nw ne se 12-7n-5e, dr 2525 ft. Simpson et al's Feilt 1-A, nwc 27-7n-5e, ru. Southern's Van Meter 1, sw sw ne 7-7n-6e, woc. Burke-Greis' Blevins 1, sw nw sw 28-10n-7e, rig. Titus' Lehmar 1, c ne ne 26-11n-8e, dr 2770 ft. **Washita**—McShirter's Fee 1, nw sw sw 34-8n-19w, dr 2150 ft.

WEST TEXAS

(This report confined to south and east portion of the Permian basin and the Delaware basin).

Brewster—G. H. Storey et al's J. P. Wilson 1, c se nw T. & St. L. sec 3, blk 212, elev 3609 ft, sd 2545 ft. H. D. Wilcox et al's W. H. Kokernot 1, nw sw sec 12, blk C, J. V. Massey sur, sd 1871 ft. **Coke**—Barnett Pet. Corp.'s J. E. Mims 1, sec T&P sec 39, blk W, elev 2352 ft, sd to acidize, td 1861 ft. **Crane**—Gulf Oil Corp.'s M. B. McKnight 4, c ne se PSL sec 3, blk B-21, elev 2701 ft, coring lime 6060 ft; University-Lassiter 2-B, swc sec 27, blk 30, rig; W. N. Waddell et al's 8, c nw ne PSL sec 4, blk B-27, elev 2561 ft, top Simpson 5843 ft, top Ellenberger 6054 ft, used 1000 gals acid at 6083 ft, swab 72 bbls oil and 99 bbls water, td 6116 ft, fsh swab. Truett B. Cranfill, Tr.'s J. B. Tubb 1, swc PSL sec 20, blk B-32, elev 2552 ft, top anhydrite 510 ft, top salt 715 ft, top Yates 1520 ft, mudding off gas and water td 2740 ft. Magnolia's University 1-15, swc sec 15, blk 30, elev 2637 ft, top Yates 2230 ft, dr 3060 ft. The Texas Co.'s University 1-G, nec sec 7, blk 30, elev 2642 ft, top anhydrite 1127 ft, top salt 1190 ft, dr 1838 ft. **Crockett**—R. H. Henderson et al's University 1, sw sw se sec 18, blk 14, elev 2386 ft, top anhydrite 265 ft, top salt 360 ft, top Yates 852 ft, shot pay 1460-1540 ft, dry, dd to sul w 1594-95 ft, dry and abd. Will Oilhausen et al's J. W. Owens 1, sd 1845 ft. J. T. Petty et al's Hoover 1, sec GC&SF sec 11, blk 1, sp and sd. Simpson & White's Hoover 1, nw ne ne sec 1, blk FF, sd 601 ft. **Culberson**—L. G. Sheddan et al's S. J. Isaacs 1, center PSL sec 25, blk 52, sp and sd. Preston W. Lewis et al's Nieuhaus et al's C. M. Caldwell 1, se nw PSL sec 15, blk 109, elev 3878 ft, top Delaware lime 1165 ft, top sand 1215 ft, sd 2500 ft. J. E. Fitz-Patrick et al's Wm. Cameron & Co. 1, c nw nw PSL sec 24, blk 81, dr 900 ft. **Jeff Davis**—H. F. Wilcox O&G Co.'s Jones-Coffield 1, nec H&TC sec 121, blk 4, elev 4537 ft, sd 3745 ft. **Ector**—Lou G. Stogner et al's T. G. Hendrick-Humble 1, near se ne nw T&P sec 4, blk 43, T-2-S, elev 3010 ft, top anhydrite 1637 ft, top Yates 2762 ft, top brown lime 3763 ft, dry and abd in sul w 4329 ft. Sinclair Prairie's Paul Moss 2-B, swc T&P sec 40, blk 44, T-2-S, elev 3050 ft, top anhydrite 1390 ft, dr 2520 ft; J. L. Johnson 3-A, nwc T&P sec 37, blk 43, T-1-S, elev 2992 ft, top anhydrite 1810 ft, cem cas 4018 ft. **El Paso**—Tri-State Oil Co.'s Kinkel Bros. 1, nec sec 237, S. F. No. 7232, elev 3977 ft, dr out cement, td 3571 ft. **Fisher**—Sam & D. Daube & Forest Dev. Corp.'s A. C. Bennett 1, c ne ne H&TC sec 51, blk 2, elev 2018 ft, top Noodle Creek lime 3679 ft, pay 3685-93 ft, pb fr ws 3699 ft, used acid and flowed by heads, sd to pump. T. G. Shaw Oil Corp. (was Dibrell and Patton's) J. B. Stribbling 1, c se se H&TC sec 110, blk 3, rur. Forest Dev. Corp.'s W. E. Morrow 1, c nw nw H&TC sec 48, blk 2, rig. Owens-Snebold Oil Corp.-A. C. Varner's J. H. Milsap 1, swc w½ ne H&TC sec 61, blk 1, sd 525 ft. **Glasscock**—O. B. Greathouse et al's R. K. Burns 1, se se nw W&NW sec 184, blk 29, sd 180 ft. **Tom Green**—Southern Cross Oil Co.'s J. W. Wilson-Upton 1, c nw AB&M sec 30, blk A, lcn. Spinner Oil Co.-H. L. Fannin's B. Reed 1, sub-div 39, Mayson-Perry sur, trace gas 4475-95 ft, dr by bailer. M. R. Stuard et al's Frank Garlitz 1, J. H. Mueller sur No. 2201, Certf. No. 760, sd 785 ft. J. B. Watson et al's Llano County S. L. 1, sec 16, Llano C.S.L. sur, dr 125 ft. **Howard**—Ward Powell et al's Guitar 1, c ne sec 17, blk "A", Bauer-Cockrell sur, elev 2508 ft, top anhydrite 1195 ft, dr 1230 ft, dr 1830 ft. S. S. Owens et al's D. S. Wright 1, nw se se T&P sec 33, blk 33, T-3-N, elev 2747 ft, sd 1375 ft. **Hudspeth**—Haymon Krupp Oil & Land Co.'s K. S. Briggs 1, nwc T&P sec 24, blk 73, Tsp. 7, elev 4016 ft, td 4226 ft, pb to 4155 ft, dr cem 4187 ft; S. J. Thaxton 1, near sec ne se T&P sec 34, blk 74, Tsp. 6, top gray lime 4580 ft, ur 4620 ft. **Loving**—Argo Oil Corp.'s T. P. Land Trust 1, se se sw T&P sec 17, blk 55, Tsp. 1, fsh 3845 ft; T. P. Land Trust 1-B, nw nw nw T&P sec 21, blk 55, Tsp. 1, top anhydrite 1307 ft, dr 2180 ft. Shell's T. P. Land Trust 1, sw se se T&P sec 17, blk 55, Tsp. 1, dr 3480 ft. **Menard**—Lee Pet. Corp.-C. D. Hagerty's Jas. Callan Jr. 1, swc e½ of J. M. Franz sur, sec 36, elev 2026 ft, sd 1267 ft. Hartzell-Nawn & O'Hara Synd.'s Wilhelm 1, sec se sec 24, Indianola Ry. sur, A-1795, sd 655 ft. **Nolan**—Frank Oyster-Ajax Drl. Co.'s E. H. Withers 1, c sw T&P sec 65, blk 21, elev 2323 ft, dr 3490 ft. **Pecos**—Cox & Moore's White-Baker 1, c sw se T. C. sec 43, blk Z, sd 430 ft. J. N. Gregory et al's O'Neill-Humble 1, south cor n¼ H&GN sec 74, blk 10, dr 340 ft. Magnolia & Tex-Mex Pet. Corp.'s J. H. McKee 1-a, near nw nw sw H&GN sec 24, blk 9, (jkd twice), elev 2385 ft, top Simpson 4775 ft, top Ellenberger 6102 ft, sul w 6262-67 ft. pb to 6177 ft, shot 190 qts 5265-5300 ft, show gas, fsh. E. R. Minshall et al's Haynie 1, sw sw nw T. & St. L. sec 28, blk 146, elev 3132 ft, dr 2512 ft. H. H. Sides et al's Blackstone-Slaughter 1-a, near sec T. & St. L. sec 25, blk 130, dr 1525 ft. Stanley A. Thompson et al's Elsinore 1, se se GC&SF sec 53, blk D, elev 2938 ft, dr by tools, wocs, td 7215 ft. Trans-Pecos Oil Co.'s F. M. Gallaher 1, ne ne nw T&P sec 9, blk 51, Tsp. 10, sd 2240 ft; Popham Land & Cattle Co. 1-B, s½ GH&SA sec 235, blk 11 (3rd hole), sd 2010 ft. Union Oil & Mining Co.'s First Nat'l Bank 1, near nec H&GN sec 6, blk 9, dr 440 ft. **Presidio**—Brite Production Co.'s L. C. Brite 1, ne¼ GH&SA sec 113, blk 12, sd 5427 ft. **Reagan**—Thomas Drl. Co.-E. H. Van Patton's J. O. Carr-Sun 1, near c ne sec 4, M. N. Hines sur, cem sur pipe. **Reeves**—Lagoki Oil Co.'s Richards-Shaw 1, c n½ nw PSL sec 16, blk 59, sp and sd. Frankley & Rice's W. A. Tunstill 1, ne ne nw T&P sec 10, blk 56, Tsp. 2, lcn. Ohio Oil Co.'s Popham Land & Cattle 1, nw T&P sec 18, blk 54, Tsp. 10, elev 3623 ft, dr by tools, td 2380 ft. **Runnels**—J. W. McLean et al's E. H. Pflueger 1, Asa Clark sur, A-506, sd 1327 ft.F. G. Beaudoin & Rex Cannon's H. Giesecke 1, blk 130, Jas. Hughes sur No. 227, sd 520 ft. Homer Price-A. E. Koener et al's J. C. Beddo 1, sub-div No. 51, D. Diaz sur, elev 1700 ft, top Palo Pinto lime 3498 ft,

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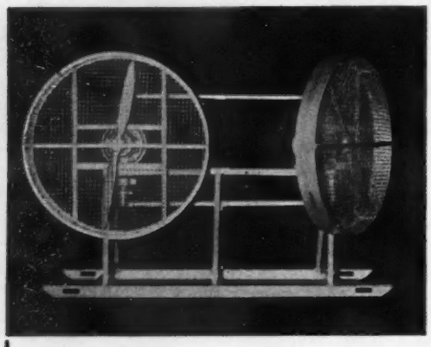

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saturated lime 3515-3603 ft, used 3000 gals acid, lost cas seat, re-acidized 5000 gals swabs little oil with water. Stephenson & Jackson's W. J. Fowler 1, near ne ne sw E. T. sec 150, sd 1355 ft. **Schleicher**—John M. Cooper et al's Bert Page 2, c ne sw GH&SA sec 40, blk L, elev 2289 ft, top lime 5320 ft, so&g, run cas 5341 ft. H. P. Opp et al's J. T. Jackson 1, nw ne T. C. sec 41, blk LL, sp and sd. **Scurry**—H. H. Coffield & Guthrie, Inc.'s E. E. Spears 1, nw nw sw H&TC sec 130, blk 97, elev 2294 ft, top lime 1512 ft, so&g 2317-24 ft, dr 2595 ft. Grisham-Hunter Corp.'s C. M. Wellborn 1, c w½ sw H&TC sec 146, blk 25, lcn. P. G. Moran et al's F. W. Hardee 1, nwc H&TC sec 99, blk 97, sd 1000 ft. **Sterling**—John W. Sward et al's T. G. Brennand 1, se se ne H&TC sec 107, blk 2, elev 2535 ft, top anhydrite 918 ft, top Yates 1028 ft, top brown lime 1746 ft, top solid lime 1820 ft, dr 2550 ft. W. F. W. Oil Co.-Cannon Bros.' Foster 1, c ne S.P. sec 9, blk 13, elev 2401 ft, top anhydrite 650 ft, top Yates 905 ft, top solid lime 1700 ft, sd hfw 2227 ft. **Stonewall**—Bert Fields et al's R. P. Pierson 1, c 80-ac lse., E. A. & S. M. Lee sur, A-817, anhydrite 2040-2200 ft, sd 4202 ft. Gen'l Crude Oil Co.'s J. D. Smith 1, sec H&TC sec 371, blk 2, 13 mi n Rotan, elev 1958 ft, base red beds 2115 ft, top Dothan 3530 ft, top Noodle Creek 3640 ft, top Saddle Creek 3813 ft, dr hfw 4751 ft. E. C. Lawson et al's Ada Pumphrey-Gen'l Crude 1, Eli Chandler sur, sd 1585 ft. A. G. Swanson & F. B. Parriott's H. T. Carlisle 1, sw se sw H&TC sec 293, blk D, elev 2806 ft, top Noodle Creek lime 3350 ft, top Adams Branch lime 4700 ft, so&g in saturated lime 5169-72 ft, run cas to 5160 ft. Percy Jones et al's fee 1, nwc sec 2, Austin-Williams sur No. 348, sd 3520 ft. **Terrell**—Schermerhorn Oil Corp.'s H. P. Allison 1, c se¼ sec 22, blk B-2, CCSD&RGNG sur, lcn. **Ward**—J. E. Fitz-Patrick, Frank T. Pickrell et al's H. B. Carr 1, c w¼ n¼ H&TC sec 125, blk 34, elev 2645 ft, top Rustler 705 ft, sd 3280 ft; F. I. Dyer 1, w¼ n¼ H&TC sec 135, blk 34, Delaware test, elev 2709 ft, top Rustler 695 ft, base salt 4845 ft, top Delaware lime 5081 ft, sd 5085 ft.

EAST TEXAS BORDER COUNTIES

Marion—Tom Bell's Carrie Moseley 1, D. Lane sur, woc 2768 ft. Ark. Fuel Oil Co.'s Wallace Johnson 1, Alexander Johnson sur, elev 217 ft, top anhydrite stringer 5256 ft, dr 5261 ft. **Panola**—Texas Co.'s Claude Adams 1, Thos. Cox sur, 13¾-in csg 579 ft, 9⅝-in csg 5940 ft, elev 287 ft, top lower Marine 7792 ft, dr 9026 ft hd black shale, sg. Walters et al's Phomplin 1, W. Moore sur, set 12½-in csg 68 ft, sd 220 ft. Petroleum Heat & Power Co.'s Frost Lbr. Co. 1, Jno. H. Gibson sur, lcn. J. W. Bird 1, Geo. Gallasty sur, lcn. **Sabine County**—Hugo Allen et al's (was H. R. Smith) Mrs. Jenny Brook 1, Isaac Low sur, 7 mi ne Hemphill, 360 ac, sd 2345 ft. **Shelby**—C. L. Cope's Pickering Lbr. Co. 1, English sur, rur. Vaughn Prod. Co.'s Pickering Lbr. Co. 1, Brooks sur, mim. Shelby Oil Co.'s Windham 1, A. K. English sur, cored saturation 3397-3422 ft, co 3422 ft. J. C. Windham 1, nwc Shelbyville townsite, lcn. A. R. Blount's Ethel Lovett 1, block 55, Shelbyville townsite, lcn. Mallard & Locke's (formerly DeArmen & Mallard) W. E. Roller 1, J. Sullins sur, top massive anhydrite 4823 ft, dr 6165 ft shale & lime. Redditt & Gray's Pickering Lbr. Co. 2, sec 237.8 ac tract, P. J. Loggins sur, testing 7-in csg cemtd at 2920 ft, td 4220 ft. Richards & Holloway's Ashberry 1, G. W. Mitchell sur, owdd, td 3405 ft.

SOUTH TEXAS

SAN ANTONIO DISTRICT

Atascosa County—Altgelt's Venegas 1, Garza gr, setting casing, 2796 ft. Hartman's Smith & Mowinckle 1, sur 172, dr 700 ft. **Bastrop County**—Ogden & Riddle's Bunton 1, Montgomery sur, completing, 1758 ft. Teas' Grizzard 1, Graham lge, drlg below 3640 ft. **Bexar County**—Fain, Harrison & Jenkins' Hansen 1, sur 55, testing, 1340 ft. **Blanco County**—Johnson's Glasscock 1, sec 50, dr below 600 ft. **Caldwell County**—Luling's Carter 4, Hinds sur, sp. **Frio County**—Thomson's Land Bank 1, sur 1, dst perf 3722-32 rec fresh wtr, no oil, no gas, woo, td 5686 ft. **Guadalupe County**—Flowers' Koepp 1, Eshaurrizer sur, reported spudded. Suttle's Manford 1, Smith sur, dr below 2417 ft, last rept. **Kendall County**—Millican & Norman's Werner 1, sur 781, drlg below 655 ft, following with 8-in csg. **Kimble County**—Phillips' Mudge 1, sec 9, dr 600 ft. Plateau's Anderson 1, Dufner sur, still testing, 1869 ft. **Maverick County**—Lockhart's Asbrook 1, sur 83, lcn. Wellington's Chittim B-1, blk 6, I&GN Ry sur, ru. **Medina County**—Abbott & Lynch's Newton 1, Vernal sur, lcn. Cromwell's Tondrie 1, Rogers sur, still testing, acidized with 90 bbls acid, swabbed little oil, 1105 ft. McCallum, Forber & Johnson's Riff 1 sur 325, set csg in serpentine, drld plugs, testing. Pepper & Taylor's Saathoff 1, sur 231, still fsg last rept. Stieren's Hoeglin 1, sur 335, drlg 200 ft. Walker's Riff 1, sur 42, stdg, may co, 815 ft. Ziegler's Weimers 1, sur 274, drlg 667 ft. **Milam County**—Western Gulf's Battle 1, Leal sur, drlg 2750 ft. **Wilson County**—Stapper's McDaniel 1, Manchaca sur, still fsg for ds last rept, td 2350 ft.

LAREDO DISTRICT

Duval County—Arkansas Fuel's Cuellar 2, sec 96, sd repairs last rept, td 5414 ft. Foster's Foster 1, sur 268, cor below 1550 ft. Gravis' Megerle 1, sur 245, cor 4250 ft. Magnolia's Duval Ranch 1, sec 280, dr 2505 ft. Richardson & Walker's Mew 1, sur 287, cored snd, no details, td around 4300 ft. Standard of Texas' D. Garcia 1, Concepcion gr, cor below 4530 ft. Humble's Bass 2, Rafael gr, set sur csg. **McMullen County**—Boysen & Jones' Nueces 3, sur 229, set sur csg. Bridwell's Nueces 1, sur 489, dr below 1134 ft. Schimmel's Kountz 2, sur 5, drlg 300 ft. Spice's Edrington 1, sur 57, prep mim. Wagner's Hagist 1, Mills sur, dr 2375 ft. **Starr County**—Seabury & Smith's Y. Garcia 1, porcion 71, mi to dd below 399 ft. Wheelock & Collins' F. B. Guerra 1-A, sh 20, Santa Cruz gr, still testing, td 7010 ft. Zimmerman's Starr 1, por 89, dr below 1000 ft. **Webb County**—Morton's Laurel 1, sur 333, dr 100 ft. Nicholson's Nicholson 1, sur 910, dr 1000 ft. O'Byrne's Lacy 1, sur 2050, lcn.

OIL LANDS—FOR LEASE

Sealed proposals will be received by the undersigned until noon, Monday, August 1st, 1938, for leasing certain lands in Lafourche Parish, Louisiana, located in T-21-S, R-23-E; T-22-S, R-23-E; T-23-S, R-23-E; T-23-S, R-22-E; divided into three blocks:

No. 1—Comprising 12,761.38 acres.
No. 2—Comprising 6,132.35 acres.
No. 3—Comprising 8,197.93 acres.

It is desired to invite proposals for all or part.

Proposals to be standard form of commercial or development lease with exploratory privileges not to exceed one (1) year and right of selection.

For further particulars and a copy of map outlining the property (Cost of map $1.00) address the undersigned.

The Edward Wisner Donation Advisory Committee reserves the right to reject any or all bids and to waive formalities.

FRED. W. MATTHEWS,
Secretary-Treasurer,
Edward Wisner Donation Advisory Committee,
c/o Charity Hospital, New Orleans, Louisiana

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Composition Tank Roofs and Bottoms installed.

Anchor Industrial Fences and American Pipe Line Equipment.

COMPLETE CONTRACT WORK

SPECIALIZING IN UNDERGROUND PIPE LINE PROTECTION

Specifications and prices upon request.

CORPUS CHRISTI DISTRICT

Bee County—Atlantic's Courtney 1, Kerr sur, lcn. **Brooks County**—Atlantic's Mestina 2, Esmeralda sur, sp & set sur csg. **Calhoun County**—Hiawatha's Roemer 2, Ogsberry sur, drlg 4225 ft, last rept (closed well). **Goliad County**—Echols' Powers 1, Avery sur, drlg below sur csg (closed well). Sun's Shaper 1, Payne sur, still ru. **Hidalgo County**—Harding-Pantana's Woody 1, porcion 69, coring 7210 ft. Johnson's Daskam 1, por 45, washed down to dd below 3725 ft. Phillips' Flores 1, sh 250, rmg at 5400 ft, last rept, td 5780 ft. Wheelock & Collins' Temple 1, betwn La Blanca & Llano Grande grants, drlg below 2775 ft. **Jackson County**—Dorrance's Guethlin 1, York sur, drlg 5000 ft. **Jim Wells County**—Bennett's Perkins 1, La Vaca gr, drlg below 2860 ft in sd/tr hole, otd 5658 ft. Coates' Stillwell 1, Spring Creek Irr. Co. sur, cleaning into pits through perfs, td 5360 ft. Humble's Adams 1, Lopez gr, cor 3265 ft. Magnolia's Martin 1, A. M. Vaca league, ru. Magnolia's Valadez Heirs, La Anima Sola gr, cut out 6000 ft ds last rept, td 6390 ft. Pan American & Callaway's Cook 1, La Vaca gr, cleaning through 3/16-in chokes, perf 5176-83 ft. Shell's Von Blucher 1, Best sur, dr 4400 ft. **Karnes County**—Fomax' Pfluger 1, Seguin sur, still lcn. **Kleberg County**—Pure's State 1, tr 522, set 9⅝-in csg, td around 7650 ft. Stewart & Blacknall's Kellam 1, sec 53, drlg 3100 ft. **Live Oak County**—Adair's Schultz 1, sur 134, wo wtr at 494 ft. Holland's Wallace 1, tr 1108, blk E, set sur csg. Holland's West 2, Ragland sur, resumed drlg below 1815 ft. Holland & Smith's Bonham 1, blk 59, Simmons subd, testing, set 1745 ft of 7-in csg, td 1867 ft. Hotchkin's Schultz 1, Haughy sur 1, cor below 1750 ft. Nanjoe's Brown 1, sec 75, sp. Richardson's West 1, tr 406, blk D, West subd, set sur csg. Tetbo's Y'Banez 1, tr 505, dr 1000 ft. Wallace & Jones & Wiggens' Burrows 1, sur 138, set sur csg, drlg below. **Nueces County**—Seaboard's Lockett 1, Robertson farm tr, Villareal gr. Union's Brown 1, Fuentes sur, resumed drlg at 9615 ft. **Refugio County**—Allen's Rooke 2, sec 46, Bonnie View subd, set 7-in csg at 5480 ft, wocs, td 6875 ft. **San Patricio County**—Bennett's Ivey 1, Coleman-Fulton Pasture Lands, lcn. Humble's Henry 1, sec 27, Taft Farm Lots subd, pits dug, wtr well drld. **Victoria County**—Superior & Martin's Robertson 1, Ricker sur, dr below 4100 ft.

TEXAS GULF COAST

Brazoria—W. C. Neville et al's Houston Farms Dev. Co. 1, Rattlesnake Mound, Perry and Austin sur, ru. Sterling's Kramer 1, flank test at Stratton Ridge, T. W. Grayson sur, dr shale 1069 ft. Texas Co.'s Jones 1, sw of Manvel, H. T. & B. No. 64, dr shale 5487 ft. **Ft. Bend**—Jack Frazier's Baker et al 1, Pilant Lake, Barrett & Harris sur, dr shale 6010 ft. Same, E. Wilson's Wood 1, Fresno, C. Heywood sur, coring shale 5675 ft. Strake's Dew 1, flank test at Sugarland, David Bright sur, abn 7511 ft. **Galveston**—Sun's Cade 1, Bolivar, A. Dickson sur, dr shale 7739 ft. **Harris**—Commerce Oil Co.'s Meadowbrook Dev. Co. 1, w of South Houston, J. R. Harris sur, dr shale 5730 ft. H. H. Given's Adoue 1, Addicks, D. Middleton sur, dk. S. G. Harrison et al's Lafferty Estate 1, sw of Clinton, lcn. **Jasper**—J. G. Mayo et al's Cartwright 1, Legrande-Magnolia Springs area, L. Legrande sur, dr shale 7500 ft. **Jefferson**—Humble's State B-6, in Gulf of Mexico, off shore of Jefferson County, Tract 7, dr surface 115 ft. **Liberty**—Sun's Jordan 1, Batson Prairie, L. Gedruf sur, dr shale 6329 ft. Texas Co.'s Page 1, West Hardin area, J. Hanley sur, dr shale 5109 ft. **Matagorda**—Ohio's Cornelius 1, n of Markham, P. C. Yarborough sur, lcn. **Montgomery**—E. R. Kirkpatrick's Foster Lbr. Co. 1, T. & N. O. No. 7, abn 5819 ft.

ROCKY MOUNTAIN STATES

COLORADO

Archuleta—Pagosa Oil & Dev. Co.'s Macht 1, 32-36n-1w, pulling 6¼-in csg to straight ream from 1455 to 1520 ft. **Fremont**—Stanley Thomas' Rickwalt 1, se ne 2-19s-70w, dr 1250 ft, so 1215 ft. **Garfield**—Roaring Fork Oil Co.'s Patterson 1, sw ne ne 36-7s-88w, dr 881 ft. **Mesa**—Continental, California & Amerada's Miller 1, sw sw nw 36-8s-91w, dr 4748 ft. Mancos shale. **Moffat**—C. R. Privett's Government 1, ne sw 1-5n-96w, dr 500 ft, 12½-in csg at 380 ft. **Park**—South Park Oil Co.'s Lemarr 1, ne ne se 34-11s-75w, dr 5950 ft. **Prowers**—Continental's Rosabelle Ruby 1, cne nw 31-21s-44w, dr 4740 ft. **Rio Blanco**—Buford Oil Co.'s Governmnt 1, cne ne 20-1n-91w, running 8½-in csg 2430 ft. **Routt**—Steamboat Springs Drilling Syndicate's Brown 1, cnw ne 1-6n-86w, ruct.

MONTANA

Carbon—Miracle Oil Co.'s Government 2, cwl ne se 3-6s-23e, sd 2308 ft, repairs. R. C. Tarrant's Fee 2, se nw 4-6s-18e, dr 840 ft. **Fergus**—Baugham & Singley's Skaggs 1, cnw sw 7-15n-20e, dr 1000 ft. O. B. Canfield's Government 2, se se ne 21-17n-24e, fsg 775 ft. **Teton**—Gulf State Oil Co.'s Wallenstien 1, sw sw sw 5-27n-5w, dr 900 ft, sg at 875 ft. **Toole**—Montana Gas Corp.'s Clark 2, cse sw 24-37n-1w, dr 2460 ft. **Yellowstone**—Riverton Oil Co.'s Fox 1, cel nw ne 14-2n-23e, fsg 1795 ft.

NEBRASKA

Scottsbluff—Houston Pet. Corp.'s Judd 1, nec ne 15-22n-57w, spd. **Sioux**—Felmount Oil Corp.'s 1, csw ne 22-27n-55w, spd. Union's Buckley 1, nwc ne ne 15-28n-55w, fsg 6848 ft.

NEVADA

Clark—Commonwealth Oil Co.'s Government 2, ne ne sw 31-21s-60e, dr 1483 ft.

NORTH DAKOTA

Williams—California Co.'s Kamp 1, cnw ne 3-154n-96w, dr 9321 ft.

SOUTH DAKOTA

Fall River—Carl Kundy's 1-X, sw sw ne se 20-10s-4e, dr 3352 ft.

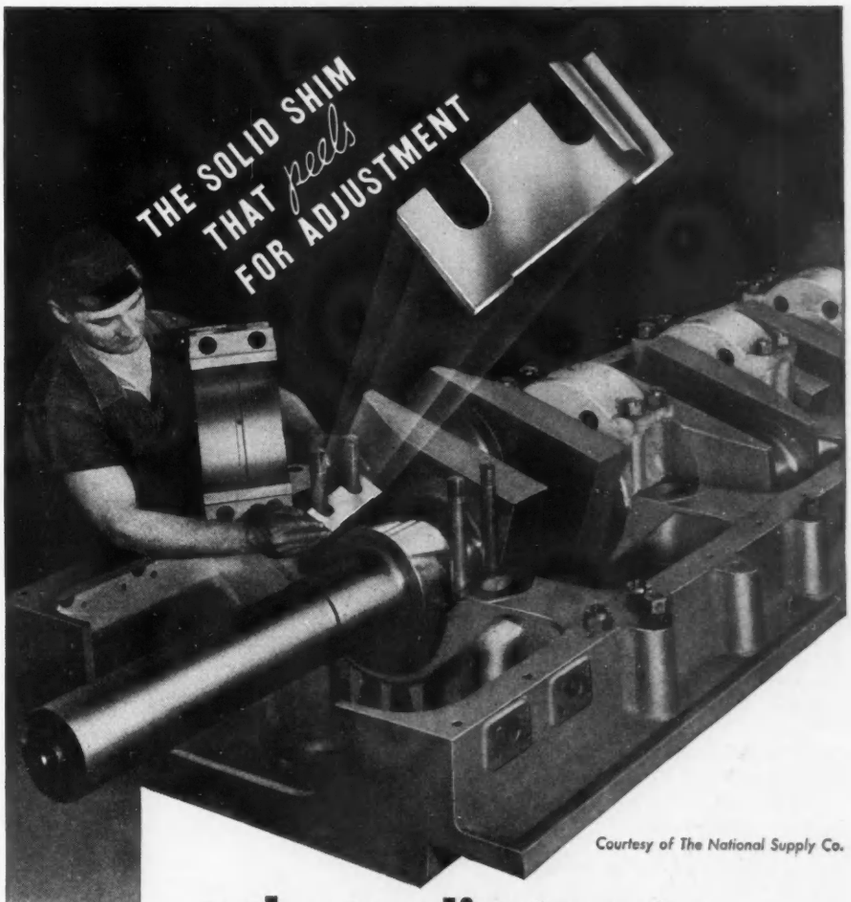
WYOMING

Lincoln—H. C. Harris' Government 1, se nw nw 23-21n-117w, dr 640 ft. **Uinta**—Stove Creek Oil Co.'s Government 2, csw nw 26-14n-119w, dr 30 ft.

Refinery strike holds back Healdton crude

An echo of the strike at its Muskogee refinery was contained in the announcement July 10 that Pure Oil Company would restrict future crude oil purchases in the Healdton field, Carter County, Oklahoma, to 40 percent of its average runs from January 1 through April, 1938. The oil is used at Muskogee, where an attempt to reopen the plant after a shut down for repairs May 2 brought on a strike.

Through Pure Transportation Company, this buyer was the first to enter the Healdton field, first running the oil to its plant at Ardmore, which was closed in 1933. Afterward the purchases were shipped to the Muskogee plant.



Courtesy of The National Supply Co.

• closer adjustment

Laminum shims are always used in the main bearings of this diesel because (quoting NATIONAL SUPPLY) . . . "They prevent an excessive amount of lube oil passing out of the bearing and diminishing the supply to other parts of our engine. They allow for closer adjustment of bearing clearance."

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LAMINUM
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NEW PRODUCTS FOR THE FIELD
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STUFFING BOX
Eastman Manufacturing Company

Eastman Manufacturing Company, Dallas, Texas, is offering an improved, heavy-duty stuffing box that provides an effective packing and at the same time minimizes the wear and tear on the polish rod. The stuffing box simplifies lining up the beam on either a straight or crooked hole and definitely indicates whether the rods are centered under actual pumping conditions.

The oscillating or reciprocal movement on a horizontal plane within limitations of the tubing diameter permits the packing element to more nearly conform with the vertical position of the polish rod without binding. On crooked holes the oscillating member will travel from one side of the box to the other and return with the up-and-down stroke of the beam. The oscillating member of the unit, due to its freedom of movement, is especially adaptable for pumping wells that have any horizontal play in the walking beam on the up-and-down stroke.

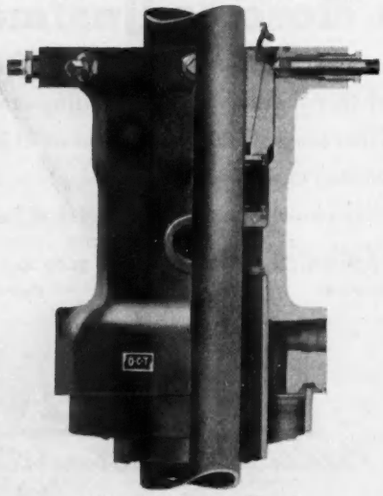
Eastman Heavy-Duty Stuffing Box

The oscillating stuffing box allows the polish rod to align itself, so it naturally minimizes or eliminates abnormal wear at the point where the polish rod contacts the tubing on either the up or down stroke. This helps to eliminate holes worn in the tubing as a result of friction from contact. It also prevents rapid deterioration of packing and reduces the number of broken or crystalized polish rods.

CASING HEAD
Oil Center Tool Company

Oil Center Tool Company, Houston, Texas, introduced its type "C-9-A" Casing Head several months ago, and, in response to a wide acceptance for the innovation which this head presents, now announces that it is in full production on all sizes and in test pressures ranging up to 10,000 pounds.

As its name implies, this new "2 in 1" head handles three strings of casing without benefit of a spool, yet its overall height is only slightly more than that of a conventional two-string head. The intermediate casing string screws into the head body, which then seats on top of the first, or surface string. Weight of the intermediate string effects a seal between the casing head body and surface string, the bottom of the casing head body being grooved and provided with a ring of special hard hydraulic packing. The third, or oil string, is suspended from slips, and, because of the slip suspension method, may be landed at any desired point. The split Neoprene packing rings, and slips are lowered to position through the blowout preventer equipment, the weight of the oil string compressing the packing to effect a seal. Hold-down screws are provided as an additional means of compressing the packing. If desired, an auxiliary welding flange, which seats on a metal ring gasket on top of the casing head body, may be used to accommodate a bead weld around the oil string to serve as a hold down. Either the regular casing head flange or welding flange will accommodate flanged tubing heads.

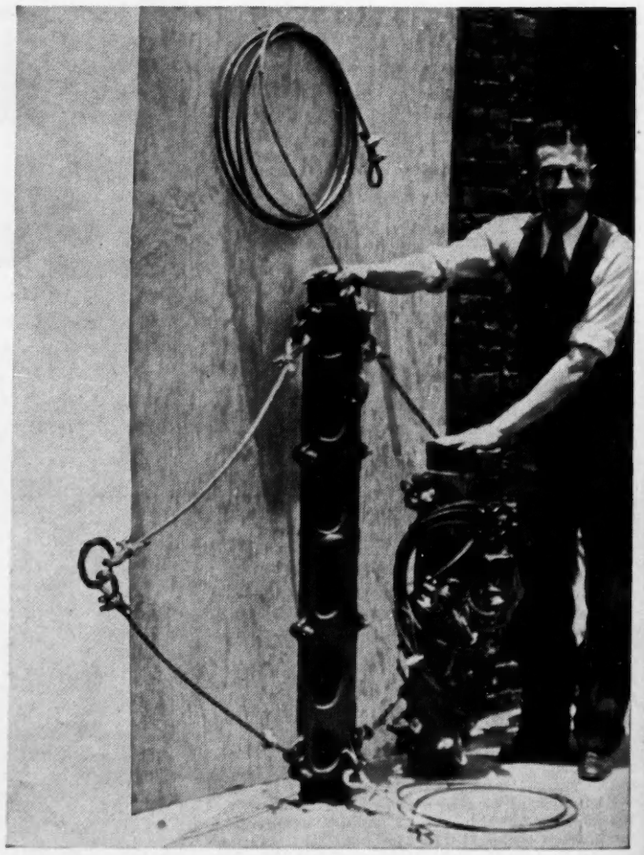

"C-9-A" Casing Head

WIRE LINE GUIDE
Patterson-Ballagh Corporation

Patterson-Ballagh Corporation, 1900 East 65th Street, Los Angeles, has recently announced a new heavy-duty wire line guide, designed for use on high derricks used in drilling wells 10,000 feet and deeper.

The basic principle of the guide is that of a freely hanging cylinder of considerable length and weight, and this principle is of even more importance with the higher derricks. Inasmuch as the rope size is generally 1¼-inch, instead of 1⅛-inch, a greater length of rope is subject to whip; the rope speed in hoisting is greater and the greater speed of rotation increases the whipping action. The new guide is 48-inch overall in length and of nearly 30 pounds in weight. The increase in weight helps to stabilize the line, and the increase in length helps to iron out the traveling waves that cause trouble and premature fatigue in spooling.

The guide has the same general construction as the standard, except that it has six removable or interchangeable sections instead of four, of the same rubber used in the manufacture of the company's casing protectors. The frame-


Patterson-Ballagh Heavy-Duty Wire Line Guide

PRESSURE-TIGHT

Every slush pump is judged by the pressure it keeps. So it pays to be particular about the materials in your pumps.

Moly iron for fluid ends is a case in point. The close grain of the iron and its freedom from defects make it pressure-tight. Its high resistance to abrasion stops wear from cuttings in the mud. Thus, added pump efficiency and longer life are certain.

By their performance records in the field, Moly cast irons have earned consideration wherever cast iron is used in drilling equipment. Send for free booklet of practical information on Molybdenum cast irons. Climax Molybdenum Company, 500 Fifth Avenue, New York City.

MOLY

Climax Molybdenum Company

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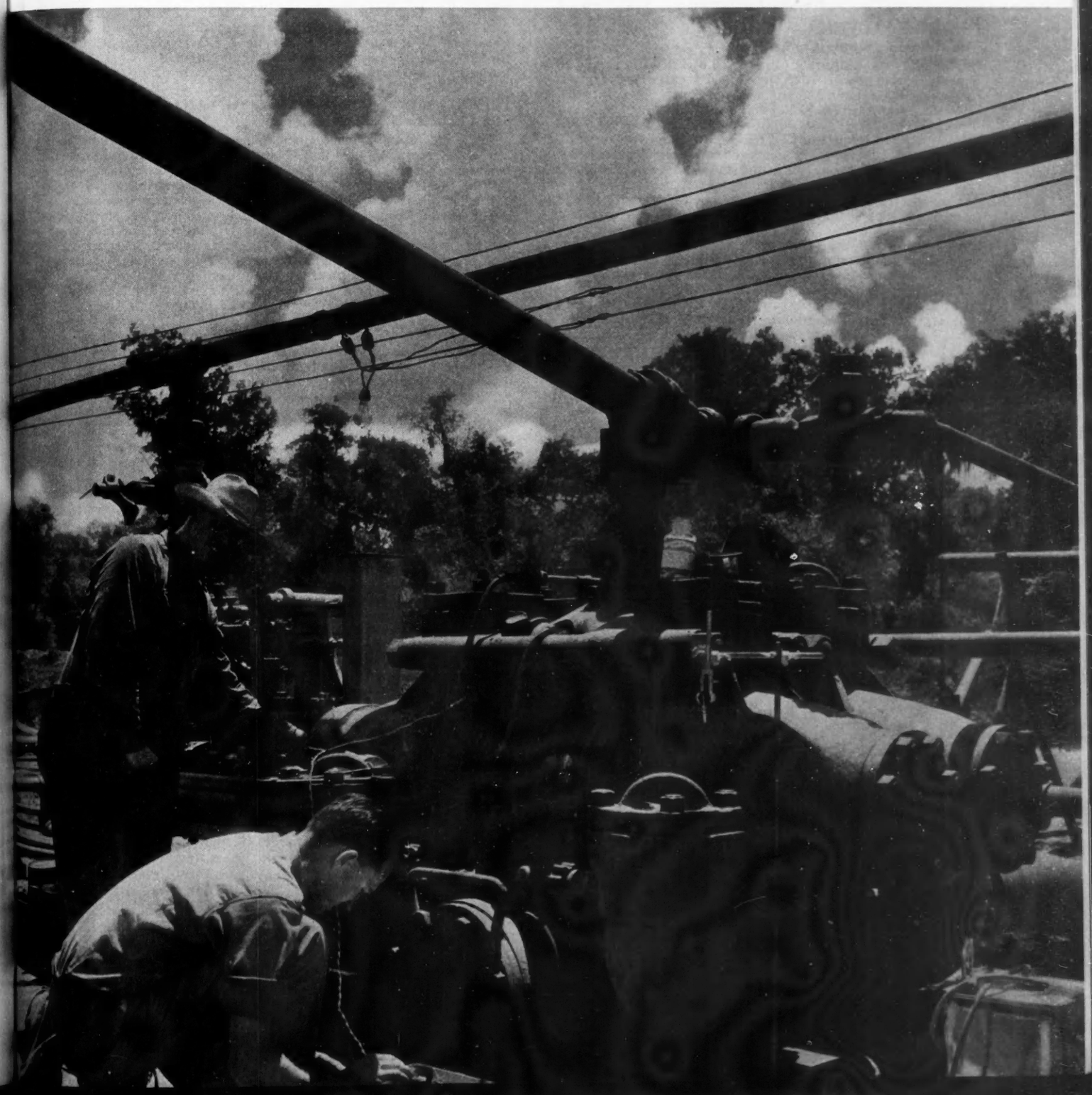


work is of cast steel, equipped with an Alemite fitting, with side bridles, a suspension and safety line. The bolts are of extra length, fitted with safety nuts, so that sections may be replaced without taking down the line.

AUTOMATIC SHUT-OFF VALVE

D. J. Murray Manufacturing Company

D. J. Murray Manufacturing Company, Wausau, Wisconsin, is now manufacturing an automatic shut-off valve to be placed in the supply line above flexible hose used to convey compressed air, steam, gas or fluids under pressure.

The valve operates on the principle of equalization, that as long as the pressure of the inlet and the outlet are nearly, or exactly the same, the plunger is maintained in an open position by means of a spring, permitting the air, steam, or other supply to flow around it in a normal manner. The plunger may be adjusted to automatically shut off the flow at any desired pressure at the inlet, or size of break at or below the outlet.

This valve has been designed as a safety appliance to promote the efficient use of tools wherever flexible hose is used; it is compactly built and may be used indefinitely without attention.

GEARED POWER

The National Supply Company

The National Supply Company, Toledo, Ohio, announces a new geared power of the enclosed weatherproof type for operating entirely in the open has recently been introduced into the shallower fields. This power, known as National Type G-30, is rated at 30 horsepower at 20 spm, with a regular stroke length of 21 inches and provision for 20 well connections. It is compact, economically installed, and adaptable to all types of prime movers. General design is the same as the larger National geared power.

The rotating shaft design, long used on larger National geared powers, brings the pull rod load close to the case and allows a wide spacing of main shaft bearings. This type of construction has proven particularly effective in providing against the affect of severe well loads. The upper half of the case is used to support the upper bearing load close to the pull rod load itself. A single crank is shrunk on and keyed to the rotating shaft. The upper half of the case is split for convenience in assembling and inspection.

All bearings are Timken roller, selected for compactness and large capacity. Alloy steel heat treated gearing with wide faced pinions of large diameter provide low bearing pressures and long wear. Well connections are made with a replaceable bronze bushing which takes all the wear that usually comes on the power disc. All enclosed parts are lubricated by a vane type oil pump, effective with suitable lubricant, under any weather conditions and operating speeds, located in the center of the intermediate shaft. Power shaft extensions for usual operating conditions are available. Complete details are given in National Descriptive Bulletin No. 202.

National Type G-30

PORTABLE CURRENT TRANSFORMER

Westinghouse Electric & Manufacturing Company

Westinghouse Electric & Manufacturing Company, East Pittsburgh, has announced a new type PC-137 portable current transformer for general portable service where the maximum in accuracy and breadth of operating range are required.

The PC-137 transformer is of the combination "through" and "tapped" construction. It is housed in high quality moldarta with attractive maroon and nickel finish. Windings are thoroughly insulated and rigidly fixed in relation one to the other and to the iron core.

"Through" capacities of 1000, 500 and 250 amperes are obtained by passing the conductor through the opening provided. Capacities of 100, 50, 25 and 10 amperes are provided with terminals mounted on top of the case. The secondary terminals are distinctly marked and provided with a short circuiting switch for greater safety and convenience. When used with a type PY-5 triple range ammeter of 2-5-10 amperes capacity, currents from 20 to 2000 amperes may be measured with a single hook-up.

LOW-ALLOY STEEL WELDING ROD

The Linde Air Products Company

The Linde Air Products Company, unit of Union Carbide & Carbon Corporation, 205 E. 42nd Street, New York, has announced a new low-alloy steel welding rod, Oxweld No. 32 C.M.S. Steel Welding Rod, for applications requiring welds of particularly high strength. It was developed primarily for insuring uniformly high-quality welds in high-strength steel pipe and plate welded by the Lindeweld process. This rod develops an average tensile strength of 10,000 to 12,000 pounds per square inch greater than rods previously used for pipe welding, yet has sufficient ductility to meet any requirements.

Another outstanding characteristic of this new rod is its exceptional resistance to overheating in the molten state. Because of this, the rod is particularly suitable for use with the new four- and six-flame tips which have recently been developed for Lindewelding pipe lines. When applying this rod, the weld metal sets up more rapidly, making it easier to control the puddle on a curved or vertical surface. This makes greater welding speeds possible and also effects a reduction in gas consumption per weld.

PRESSURE OPERATED PERFORATOR

Houston Oil Field Material Company

Houston Oil Field Material Company's Cutting and Fishing Tool Division, Houston, Texas, has recently added to its line of special equipment a unique pressure operated perforator, the knife of which is forced out by compounded hydraulics.

Run in the hole on drill pipe, the tool is actuated by fluid pressure exerted against a piston in the upper part of the tool. This piston in turn drives a second piston in the lower part of the tool, through an 8½ to 1 area reduction, thereby compounding pressure in that same proportion. A 500-pound fluid pressure from the pumps is, in this manner, increased to 4250 pounds pressure by the lower piston. The lower piston actuates the perforator blade; driving it, through a simple mechanism into the casing.

This Week with the Industry's EQUIPMENT SUPPLIERS

Marston Named Regional Manager For Sperry-Sun at Houston

Robert L. Marston has been appointed regional manager for Sperry-Sun Well Surveying Company with headquarters at Houston. He replaces Morton T. Higgs who has resigned. Marston formerly was connected with Sun Oil Company.

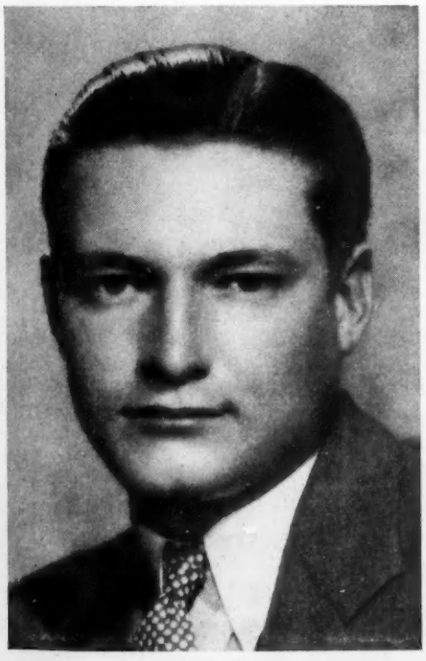
Blaw-Knox Completing Piping to Big Plant

Blaw-Knox Company, through its Power Piping Division, is completing ahead of schedule the general mill piping for the new Irwin Works of Carnegie-Illinois Steel Corporation. This piping installation is one of the largest ever undertaken in connection with an industrial project. It involves about 60 miles of piping, ranging in size up to 48 inches in diameter, and includes lines for high and low pressure steam; filtered, raw and city water; hydraulic systems up to 3500 pounds pressure; air, fuel and acid supply; and circulating oil and grease systems. Most of the lines were pre-fabricated to facilitate the field work.

Paul Olesen Representing Inferno Company at Houston

Paul Olesen, who just completed a course of training in the shops of The Inferno Company at Shreveport, Louisiana, is now in charge of the company's field activities in the Houston area as district manager. All Inferno field men, regardless of their previous training and experience, are required to begin their work with a period in the plant where Inferno steam equipment is made and assembled.

Olesen graduated in mechanical engineering from Pratt Institute in 1929. He spent one year in South America as combustion engineer for Pan-American Corporation at its Aruba, D. W. I. refinery. He later represented Manning, Maxwell & Moore of Bridgeport in Tulsa and Dallas areas over a period of six years.



PAUL OLESEN
Inferno Company District Manager at Houston.

ROBERT L. MARSTON
Regional Manager for Sperry-Sun Well-Surveying Company at Houston.

Bethlehem Moves Downie to Headquarters Office

Norman R. Downie, formerly engaged in the sale of wire rope in the New York sales district, Bethlehem Steel Company, has been transferred to the home office at Bethlehem, and will assist C. M. Ballard, manager of sales, wire rope.

Downie was connected with the former Williamsport Wire Rope Company as eastern manager from 1925 until the Williamsport company was acquired by Bethlehem, last year.

Walter O'Bannon on Trip to Pacific Coast

Walter O'Bannon, of Walter O'Bannon Company, Tulsa, is spending a month in California, combining business with pleasure. He was accompanied by Mrs. O'Bannon. They will return to Tulsa about August 10.

Another Illinois Store for The Continental Supply Company

Another Illinois branch of The Continental Supply Company will be opened on July 20 at St. Elmo.

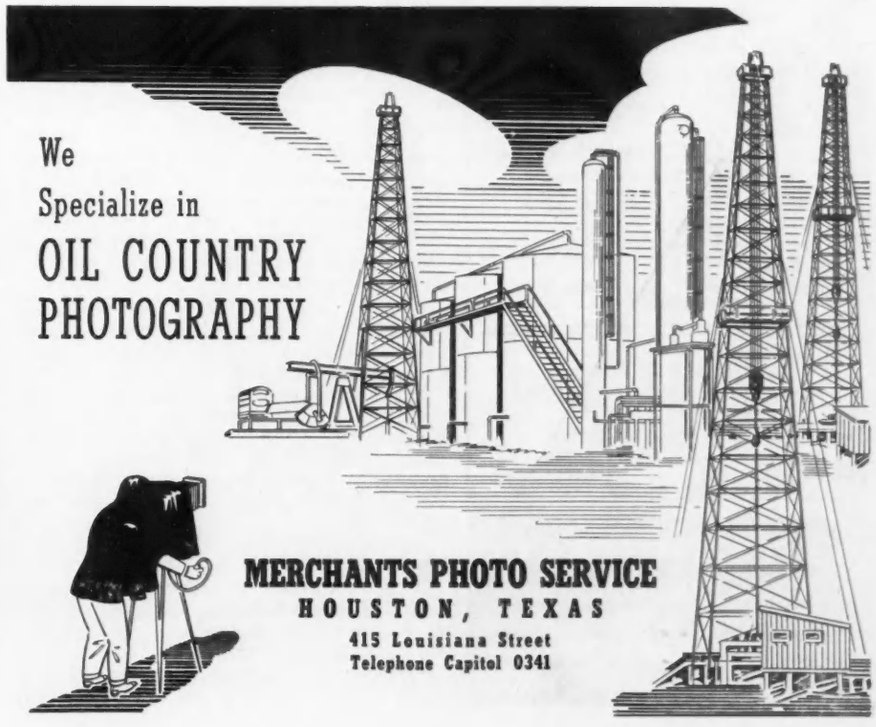
This store will be supervised by J. B. Sparks, who formerly was store manager for the company at McPherson, Kansas.

Gaso President Spending Vacation in Cuba

T. J. Flanagan, president of Gaso Pump & Burner Manufacturing Company, of Tulsa, left the city with his family on July 12 for a month's vacation in Cuba.

Talley Representing Jensen Brothers in East Texas

John Talley has been appointed a district representative of Jensen Brothers Manufacturing Company, Coffeyville, Kansas. His territory covers part of East Texas, Northern Louisiana and



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STANDCO BRAKE LINING
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JOHN TALLEY
Representing Jensen Brothers

Arkansas with headquarters at Atlanta, Texas.

Talley has been connected with supply companies in the Mid-Continent since 1920 and was formerly with Frick-Reid Supply Corporation, at Haynesville, Louisiana, and Bridgeport Machine Company in East Texas and Rodessa, Louisiana.

Hercules Declares Preferred Dividend

The board of directors of Hercules Powder Company today declared a regular quarterly dividend of 1½ percent on its preferred stock. The dividend is payable on August 15 to stockholders of record on August 4.

Service Record Anniversaries Noted by American Meter

Members of the present management and sales personnel of American Meter Company, who can pride themselves on many years of continuous service with this organization, are extending congratulations during 1938 to three associates in particular.

A. E. Norton, manager of the Nathaniel Tufts Meter Works of American Meter Company in Boston, and a member of the board of directors, first joined the company on July 1, 1898. His 40 active years of continuous service with the company have brought the satisfaction of success and of numerous friendships in the industry.

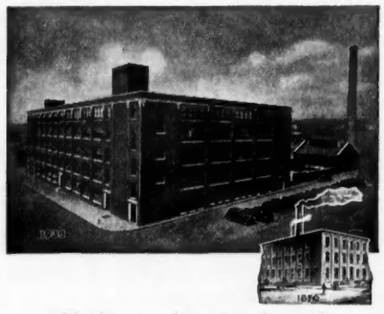
W. H. Kaiser, joining Metric Meter Works, Edie, Pa., in 1898, became foreman of that American Meter Company plant in 1904, master mechanic in 1916 and superintendent in 1926. He has continued with great success in this office, having supervised the purchase and design of precision machine tools, punches, dies, jigs and fixtures which are a feature of the operations at the Erie plant.

Norton McKean, who joined the Boston plant on July 14, 1913, completes a quarter century of affiliation with American Meter Company. He became assistant manager of D. McDonald & Co. Works in Albany in 1925, manager in 1928, a member of the board of directors in 1932, general superintendent in 1936, and vice president in 1937. His thorough training in all phases of the business, his executive ability and leadership have made his services an asset of inestimable value to the organization.

Willson Products Enlarges Plant

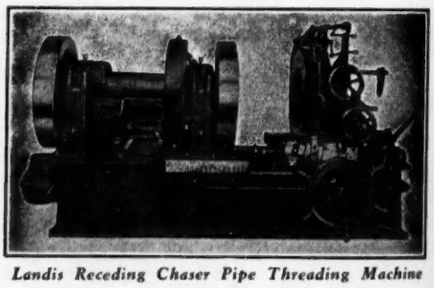
Willson Products, Inc., Reading, Pennsylvania, has just completed an extensive building program. The enlarged five-floor factory now contains 110,000 square feet of floor space. The building is fireproof, incorporating every known safety device, and is exceptionally well lighted and ventilated. The company operates its own power plant.

Officials of the company include: Dr. Frederick Willson, president and chairman of the board of directors; Thomas A. Willson, vice president and general manager; Harold M. Hafer, secretary-treasurer; M. C. Rider, pur-



Modernized and enlarged Willson factory.

D. S. MAIR
MACHINERY CORPORATION



Landis Receding Chaser Pipe Threading Machine

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chasing agent; E. L. Hettinger, head of optical research department; Dr. A. D. Brandt, in charge of industrial hygiene laboratory; Gordon D. Richardson, export manager; Frank E. Camp, sun glass sales manager, and Bernard Leavy, advertising manager.

Meter and Valve Salesman Returns from South America

James Baker of the Tulsa, Oklahoma staff of the Pittsburgh Equitable Meter Company - Merco Nordstrom Valve Company, has returned to the United States following a special assignment in South America. Baker, who left Miama, Florida, via Pan American plane on January 2, visited Colombia, Venezuela, Aruba, Curacao, Trinidad and Puerto Rico in the interests of his firm. The majority of the distance travelled was covered by plane supplemented by trains, automobiles, boats and even mules in order to reach some of the more inacessible locations.

Jim Baker on location in South America

He was routed by Armco International Corporation which represents Pittsburgh Equitable Meter Company and Merco Nordstrom Valve Company in South America.

Baker is now covering his regular territory regaling the trade with stories of the trials and tribulations which beset a non Spanish-speaking American in the Caribbean.

The Buda Company Makes Board Changes

At the July meeting of the board of directors of The Buda Company, Harvey, Illinois, L. M. Viles, president for over 20 years, was elected chairman of the board. J. S. Dempesy, who has served the company for many years as secretary, treasurer and vice president, was elected president. F. E. Place who has been associated with the company since 1908, retired as senior vice president. An executive committee consisting of Dempesy and two operating vice presidents, R. K. Mangan and E. D. Conant, will direct the affairs of the company.

Judging of Papers in Lincoln Welding Competition Is Underway

Papers submitted in the $200,000 Award Program of The James F. Lincoln Arc Welding Foundation are being judged at Cornell University, by the foundation jury of award which convened July 2. Thirty jurors from engineering departments of various colleges and universities will judge the entries under the direction of Dr. E. E. Dreese, of Ohio State University, chairman of the jury of award.

To assist in properly appraising the merits of any paper, the jury of award will consult experts or outstanding authorities in the various classifications of the award program.

In judging the papers, the jury will be evaluating original studies conducted by engineers, designers, architects and others over a period of 15 months between the announcement and close of the foundation award program. The subject studied during the period was the application of the arc welding process of construction to the design of all types of products and structures. The mass of accumulated data, being for the most part in new fields of design will, therefore, be a valuable addition to engineering knowledge. Evaluation of the studies will be on the basis of benefits from application of this industrial process. Rewards for the studies will be in 446 individual amounts ranging up to $10,000, with the Grand Award of $13,700.

The jury will remain at Ithaca until it completes the selection of the winning papers. It is expected that the announcement of award winners will be made about the middle of September.

Weiskopf and Garvey Named to Union Drawn Operating Posts

Two changes in operating heads at the Massillon, Ohio, plant of Union Drawn Steel Division are announced by Republic Steel Corporation, Cleveland, Ohio. Thomas Weiskopf, former-

THE CAVINS AUTOMATIC HYDRAULIC SUCTION BAILER AND FISHING TOOL.

LIKE THE "MOUNTIE"
The CAVINS
Always Gets What It Goes After!

You can depend on the Cavins Automatic Hydraulic Suction Bailer to bring back whatever "tough customers" you send it after in your well. It succeeds where others fail.

Breaking hard-packed sand bridges, cleaning out ordinary sand, recovering "fish" and junks of all kinds, cleaning perforations or screen—no matter what the job, the Cavins does the job more efficiently than any other well cleaning method—and many times faster.

Saves trouble, time and production losses. On your next cleanout job call your nearest Cavins Service Man at any hour of the day or night, and send the Cavins Bailer after the troublemakers in your well.

CAVINS

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ly assistant superintendent, is appointed superintendent and Frank A. Garvey is named assistant superintendent.

Weiskopf's experience with Union Drawn dates back 35 years. For several years, he was manager of the No. 2 plant and later was named superintended of No. 3 plant, both located in Beaver Falls, Pennsylvania. For the past two years, has has been assistant superintendent at Massillon.

Garvey is remembered as an industrial engineer and production executive in the automotive and machine tool industries, having held major posts in both for 15 years. For the past 18 months, he has been engaged in special engineering work for the Union Drawn Steel Division. He is a University of Notre Dame graduate in mechanical engineering.

Former superintendent of the Massillon plant until his death on June 19, was John S. Lynch. He had been associated with the company for 35 years, the last 6 of which he spent at the Massillon post.

Buda Engine & Equipment Company in Larger Quarters

Buda Engine & Equipment Company has moved into new offices and shop located at 15 Kendall Street, Houston, this being headquarters for company which operates in Texas, Louisiana and New Mexico.

Included in the enlarged facilities, are those necessary for complete engine rebuilding, a complete stock of repair parts, general engine accessories, V-belts, etc., the entire organization, of course, being for the sole purpose of serving the oil industry.

J. B. O'Connor of Clark Brothers Company is joining his family at Banff, Lake Louise, to drive with them to Vancouver Island, B.C., where the family will spend the summer.

▼ CATALOGS . . . BULLETINS ▼

Helpful Publications Which Manufacturers Will Be Glad to Send Free for the Asking

End Suction Pump

Ingersoll Rand Company, Phillipsburg, New Jersey, has just brought out a new bulletin showing pictures of several installations, as well as complete tables of performances and dimensions of the new style CRV suction centrifugal pump.

General Electric Literature

General Electric Company, Schenectady, New York, has recently issued the following bulletins:

Bulletin No. GEA-19H on magnetic motor-starting switch No.; GEA-743B on reversing drum switches; No. GEA-1750D on A-C arc welders; No. GEA-2234B on manual motor-starting switch; No. GEA-2292A on D-C magnetic crane control; No. GEA-2679A on photo-electric relay for automatic light control; No. GEA-1607B, on D-C generators and exiters; No. GEA-1542C on type B D-C motors; No. GEA-2889 on magnetic motor-starting switches; No. GEA-2571B on "Reconditioning Flooded Electric Equipment"; and No. GEA-1437C on integral and fractional-horsepower gear motors.

Pressure Regulator

Victor Equipment Company, 844 Folsom Street, San Francisco, presents a well illustrated and comprehensive bulletin covering pressure regulators. It contains many pictures of cut-open single and two-stage regulators; offers full details in regard to regulator design, construction and working principles, as well as flow charts showing per-minute delivery volume of various regulator models over their complete delivery pressure ranges.

Wood Tanks and Pipe

National Tank and Pipe Company, Portland, Oregon, recently issued two buletins describing wood pipe and wood tanks. Typical illustrations make clear many features of tank construction, and the wood pipe bulletin contains a detailed description of the manufacture and application of wood pipe.

Automatic Lubricators

Manzel Brothers Company, 309 Babcock Street, Buffalo, New York, illustrates and describes in a new catalog Model 94 force feed automatic lubricators for lubricating engines, pumps, compressors, and other equipment used in the oil industry.

Special Equipment Catalog

The Amco Corporation, Chicago, announces the publication of a new complete catalog in which hundreds of the oil industry's equipment and supply items are illustrated. With the aid of modern photography it is felt that the catalog will be of distinct help to oil company buyers.

Valves

Homestead Valve Manufacturing Company, Coraopolis, Pa., has issued a new valve reference book which features a more complete line of boiler blow-off valves; several new lines of lift-plug valves, and more complete dimensions, tables and facts about the various types of valves.

Chains

Chain Belt Company, Milwaukee, Wisconsin, recently published a new data book on oil well chains. It contains all the information concerning Rex oil field chains together with information concerning the history of these chains and the up-keep and care.

Mechanical Rubber Goods

Goodyear Tire & Rubber Company, Akron, Ohio, has published a new illustrated catalog of mechanical goods. In addition to information on construction and application of various mechanical goods, the catalog contains valuable hints on proper care of rubber belting and maintenance of belting service records and a complete list of the company's mechanical goods branches throughout the United States.

Steam Turbines

Westinghouse Electric & Manufacturing Company, East Pittsburgh, recently released a 12-page illustrated booklet describing type C general purpose turbines with capacities ranging from 5 to 500 h.p. at turbine speeds of 1000 to 5000 r.p.m. The vital points to check when selecting a turbine are discussed and installations of type C turbines driving a circulating pump for condenser, draft fan, boiler feed pump and centrifugal pump are shown.

Truck Cranes

Harnischfeger Corporation, Milwaukee, Wisconsin, announces the completion of bulletin TX-45, which completely describes the various sizes and types of truck-mounted cranes and excavators.

Welding Electrodes

Harnischfeger Corporation, Milwaukee, Wisconsin, recently issued bulletin R-5, containing complete and specialized information and data on the various types of Smootharc welding electrodes. This bulletin includes spar tests, procedure sheets and many other informative suggestions.

Trailers

Highway Trailer Company, Edgerton, Wisconsin, has issued three new pictorial folders showing two new standardized trailers. One folder illustrates the new "Roadmaster"; another features the new "Freightmaster" unit; and the third folder shows many of these trailers already in use throughout the country.

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Please send me, without obligation, free booklet described in July 25, 1938, issue of THE OIL WEEKLY.

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Squeaks from the Bull Wheel

Faux Pas

A tramp was sleeping behind the bunker of a golf course when the club secretary, prowling around, kicked him none too gently and ordered him to clear out.

"And who are you?" demanded the tramp.

"I'm the secretary of the club," said the official.

"Well," replied the tramp, "that's no way to get new members."

Drink

"Do you think drinking affects the disposition?"

"Sure, my wife's disposition has certainly changed since I started drinking."

Writer: "How much will you charge me for board for a few weeks while I gather material for my new country novel?"

Hiram: "Five dollars a week unless we have to talk dialect. That's $3 extra."

Yessir

I once had a classmate named Guesser,
Whose knowledge got lesser and lesser.
It at last grew so small
He knew nothing at all—
And now he's a college professor.

Mouths of Babes

The university president was delivering his baccalaureate speech. In the audience were an elderly man and woman, obviously foreigners, who were having some trouble understanding the president's address to the class, of which their son was a member.

"What he say?" finally demanded the mother.

"Who?" asked the father.

"The big fellow in the black robes. What he say?"

"He say school is out."

Service

"I say, my telephone hasn't been working for a month, and you paid no attention to my letter of complaint."

"We did. We rang you up to ask what was wrong and got no answer!"

Seeking Comfort

We are told one third of the nation is ill-housed, ill-nourished and ill-clad.
I didn't realize so many go away for the summer.

Better Than Gas

The boy and girl were out on the highway when the car broke down. He didn't seem to mind and wanted to make love. "My kisses will put new life in you," he said.

"Then for goodness sake get out and kiss the car," she replied sweetly.

"My doctor," related Dinkus, "says that I must take a 'constitutional' every morning."

"What's that?" asked Pinkus.

"That," explained Dinkus proudly, "means taking a walk."

"Then," inquired Pinkus, "why didn't the doctor say 'taking a walk'?"

"If he just called it that," informed Dinkus, "how could he have charged for it?"

The Compliment

"What do you think of my work with the camera?" asked the young man, an enthusiastic amateur photographer.

"It's splendid in its way," replied the girl. "It's better than any of the professional caricaturists could do, I'm sure."

A Matter of Method

During the Indian war in 1882 General William Sherman was one day visiting Camp Apache, in Arizona. A big raw-boned redskin, who was captain of the scouts, kept following the general all afternoon, pleading for a small cannon which was standing in the parade ground. Exasperated, Sherman finally said to the Indian, "What do you want of that cannon anyway? Do you want to kill my soldiers with it?" "No," replied the Indian mildly, "want to kill cowboys with it; kill soldiers with a club."

Optimist

"Anyhow, I'm glad the world is filled with sunshine."

"An optimist, eh?"

"No; a straw hat salesman."

Aunt and Ant

It was the twins' first visit to the zoo and their Aunt Prim, who had charge of them, was endeavoring to render the visit memorable. She succeeded but not quite in the manner she anticipated.

The lessons in zoology were boring enough but her continual nagging at the youngsters in regard to their behavior was making their lives a misery. At last they arrived at a cage containing a long-snouted animal which she informed them was an ant-eater.

Tommy brightened up at once, nudged his sister and whispered:

"Do you think we could push her in?"

Once Each Year

Office Boy: "Yes, sir, I was at my grandmother's funeral."

Boss: "Who won?"

Specialist

The robber entered the very modern bank. He stuck his gun through the cage.

"This," he cried, "is a hold-up!"

The cashier pointed with his pen.

"Three windows to your left," he directed, and went right on with his work.

The thief's blood pressure hit a new high.

"What do you mean 'three windows to the left?'" he snapped. "You've got plenty of money right here on your counter."

"That's right," the cashier admitted. "But this is the receiving teller's window!"

Precaution

"I have had my cashier arrested."

"Has he robbed you?"

"Not yet, but afterward would be too late."

Rabbits

In Australia the jack rabbit upset Nature's balance.

And here rabbits pulled out of a hat upset the Treasury balance.

MILLER

WILL increase YOUR OIL CHECKS

You will be surprised at the increased oil "runs" after a MILLER Sand Pump has cleaned out the sand and sediment that is holding back production. That's why the MILLER is in World-Wide use!

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type. ¼-inch wall tubes HEAVY Type Sand Pumps.

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To Meet Every Condition

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With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

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Used when tools are run and when well is shot to quickly remove loose material.

● STAR BOTTOM
Used for cutting the sand loose.

● CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Page 1445 COMPOSITE CATALOG

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